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ADDRESSES.

A BRIEF REVIEW OF SOME OF THE RECENT PRACTICAL ADVANCES IN MEDICINE AND THERAPEUTICS.

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The function of the member of this Association who is called upon to deliver the annual address in medicine is not to give in detail the course and results of laborious laboratory investigation nor to weary his hearers with long reports of cases. It is rather his duty to present as far as lies in his power certain broad views of the present status of the non-surgical side of our work as doctors of medicine.

The consideration of one particular field of work is also out of place and I have therefore decided that a brief and necessarily imperfect discussion of the present status of therapeutics and diagnosis would enable me to fulfill, to some extent at least, the duty which has devolved upon me. The department of surgical therapeutics and diagnosis does not fall to my care and will be ably discussed by Dr. Mudd to-morrow.

By therapeutics I do not mean to indicate a subject already well worn, though new, namely, an enumeration of the new remedies which the manufacturing chemists are foisting upon us with an ardor beyond description and with a success, so far as numbers are concerned, which is appalling to many conservative members of our profession. These drugs have their proper place and form only part of the great line of advance which while it is broken now and again by the development of a weak spot is nevertheless moving forward, bringing with it much cause for congratulation and many promises for even more beneficent results in the future. To regard our therapeutics of to-day as improved only because of the invention of such compounds is to ignore the whole cause for encouragement, namely the increasing tendency to place all our remedial measures on a rational basis.

Very closely associated with this improvement in therapeutics is the increased accuracy of diagnosis which modern research has placed in our hands, for the correct diagnosis of a case must always be an important preliminary to proper therapy. Not the least of these diagnostic gains is the ability which we possess to recognize the presence of tuberculosis when the signs of the disease are so indefinite that positive information of the condition of the patient can not be gained. Again in many instances where unusual and aberrant symptoms are present, microscopical examination of the blood may show the presence of various micro-organisms. Nor should we forget the valuable aid rendered us by the advances in the diagnosis of gastric affections by the use of the stomach tube and the microscopical and chemical examination of the gastric contents, more especially in regard to the absence of hydrochloric acid in cancer and its excess in cases of gastric ulcer. Finally, an important aid to diagnosis in gastric disorders was the introduction of salol by Ewald to determine the motility of the stomach and the question of dilatation or atrophy.

The day is past when there is any excuse for the physician dodging a diagnosis and treating a patient on the indefinite basis of "general principles," and the public have learned that the shotgun prescription of years ago is only a cover for the ignorance of the medical attendant who expects the various drugs to influence an area the diseased state of which he is himself unable to discover.

The prescription of to-day is to be written only after careful examination and study of a case, and its constituents must be directed towards the condition they are to modify. It is necessary therefore that diagnosis should be well enough advanced to enable us to discover the exact stage of a malady and the precise condition of the patient's system in addition to the knowledge that a given disease is in existence in his body.

Fortunately the improvements in diagnosis and treatment have kept pace with one another although other branches of medical science have fallen to the rear. The advances have been rapidly yet gradually accomplished, not by startling leaps but by small and lasting accretions which have formed on the sides of our older views, either modifying their appearance or completely changing their aspect.

These gains have not been heralded to the profession and the world at large as have many of the newer surgical procedures which are often so brilliant at their inception that they dazzle the professional eye to such an extent as to blind it to the subsequent shrinkage which takes place in their practical importance. Sudden rushes are attractive and for this reason even the laity often chide the physician for failing to advance as rapidly as the surgeon. The very character of a surgical operation is destined to attract attention from the more humdrum, but none the less important, medical methods, yet it is the latter which require in many instances a greater amount of attention to the minute points of differential diagnosis. As I have pointed out elsewhere the relation of the knife to a diseased tissue must always be identical, while the relation of a drug to a disease process must constantly vary with the perverted function of the special protoplasm involved. The one carves the wood the other grafts upon its living cells impulses which alter its activity. In the one case the questions of shock and repair are

the points to be considered; in the other, the ever changing vital processes still more varied by perverted function must be balanced and their importance weighed. For these reasons it is impossible for the physician to advance his methods by strides or bounds, and he can only remember the story of the hare and tortoise when accused of being dilatory.

Leaving these general views of the question of medical, in distinction from surgical advancement, let us if possible discover in what directions we have really made distinct advances. There are those who have seen method after method of diagnosis and treatment rise and fall, and who have in consequence become pessimistic as to the value of new ideas, partly perhaps because they have not employed them properly. There are others who are equally optimistic and excessive in the laudation of new or old methods of diagnosis or remedial measures. A careful survey of the field certainly shows that a gain commensurate with the amount of labor expended has been made, and the only loss or standstill that can be found is the tendency of the profession in general to rush after new things to the neglect of the old, which in many cases deserve more attention than is given them.

A very important part of this advance has been recognition of the fact that many conditions heretofore regarded as distinct individual maladies and treated accordingly, are in reality merely manifestations of functional disorder elsewhere. No more interesting example of this can be adduced than anæmia. But a few years ago we were taught that anæmia was a state in which the blood was impoverished, and these conditions of anæmia might be divided into those which were simple and essential—or in other words those which would respond to treatment and those that would not. We had this empirical information, and we also knew by experience that while iron was useful in one form of simple anæmia independent of malignant disease, arsenic was more valuable in another. Later than this we came to regard anæmia chiefly as a manifestation of disease in certain blood making organs or an important symptom of many perverted functions, and finally the invention and employment of the hematocytometer and the hemoglobinometer has enabled us to separate anæmia into a condition in which there is a decrease in the number of corpuscles or a decrease in the amount of hemoglobin in each corpuscle. In other words, we now know that pallor may be due to too few corpuscles or too little hemoglobin, and this being known it is only a step to the understanding of the empiricism of years ago in regard to the use of iron and arsenic, namely: that in that form of anæmia due to a diminution in the number of blood cells arsenic did good because by its alterative powers it increased cell activity in blood cell making organs, while where hemoglobin was lacking iron came particularly into play. For these reasons we find that small doses of alteratives, such as corrosive sublimate and other mercurials, often overcome the anæmia due to deficient manufacture of cells, and we may explain why it is that arsenic usually fails to do good in chlorosis, an anæmia of deficient hemoglobin, and succeeds in pernicious anæmia, which is characterized by a deficient number of corpuscles but relatively increased hemoglobin.

It is unfortunately only too true that the entire subject of blood making and blood breaking is as yet very imperfectly understood, but our therapeutic facts rest on rational grounds now, if not before, and if the pathologist will give us more information upon these subjects, other remedial measures will be introduced or the empirical employment of others still further explained. Practically speaking, the therapeutist recognizes two very important points, the causes of which the pathologist must eventually solve, namely: that one class of anæmias are due to defective or deficient hemogenesis and another to excessive hemolysis. The former are generally believed to form the simple class and the latter the essential or pernicious class. It is in the deficient hemogenesis class that we fail. More than this, the causes of excessive hemolysis are so various that we can further divide them into removable and permanent; the removable being represented by the cases in which copræmia or auto-intoxication takes place, and the others by the true pernicious anæmia, about which we really know very little, save that most observers find evidence of profound hemolysis in the percentage of iron in the liver; while in the dark colored urine they believe a destructive agent exists which prior to its excretion has slaughtered many corpuscles. Unfortunately it is at present impossible for us to separate clinically the hemogenous anæmia from that of hemolytic excess unless we find evidence of great corpuscular disintegration in a copious elimination of hemoglobin in the urine, or a jaundice evidently hematogenous in character, or a large number of defective corpuscles which would perhaps indicate defective hemogenesis rather than that they were scarred veterans of a battle with a poison in the liver cells or elsewhere. Post-mortem signs often aid us in the differential diagnosis, but this is too late to do any good to the doctor or patient.

There is one point, however, about which there can scarcely be any doubt, and that is that in many cases iron is greatly abused, being given where there is no indication for it, or more frequently given in excessive doses. By excessive doses I refer to as much as six to twelve grains a day of reduced iron. The amount of iron in the human body is very small, and every study ever made of its absorption and elimination after absorption has shown that these processes are very slow. Hamburger recovered from the feces nearly all the iron administered, and Jacobi proved that even when the iron was injected into the veins 10 per cent. was at once eliminated by the bowels, liver and kidneys, and the remainder deposited in the liver, spleen and other tissues in the same manner as is any metallic substance. The researches of Gottlieb have also been in confirmatory lines. When we consider that there is in the human blood only about thirty-nine grains of iron all told, we can see that the use of twelve grains a day in the course of a little over three days places a double quantity of the metal in the economy which is not needed, and is either cast out or deposited at any convenient spot to lie undisturbed until it can be extruded.

Much of course depends upon the cause of the anæmia, but there is only one excuse for the use of the doses named, viz: a condition of the digestive apparatus which results in the formation of a sulphide of iron in great quantity, so that only an infinitesimal amount escapes into the system. This explains the empirical fact that in some cases of chlorosis or intense anæmia iron has to be given in large doses to accomplish any good.

One of the best and most recent papers on this subject is that of Ralph Stockman, who gives a masterly summary of the subject of the absorption of iron in chlorosis. In this summary he points out that we have three chief theories as to the action of iron in anæmia. The first, the absorption theory, is based on the fact that as iron is taken into the body with the food, the iron of the hemoglobin must be obtained from this source, and therefore that medicinal iron given by the mouth must be absorbed. The second theory rests upon the belief that iron is not absorbed when given by the mouth, in addition to that in the food, but simply acts as a stimulant to the mucous membrane of the alimentary canal, therefore increasing the digestion of food and so overcoming anæmia by the general improvement coincident upon proper nutrition. The third theory is that of Bunge, namely: that in chlorotic conditions there exists an excess of sulphur or sulphuretted hydrogen in the bowel, which changes the iron in the food into a sulphide of iron which he says can not be absorbed. He believes that the inorganic iron which is given as a medicine saves the organic iron of the food by combining with the sulphur, and so indirectly cures the anæmia by the protection afforded the food iron. It is important to remember that each of these theories have been supported by many careful experiments, but it is also well to bear in mind that both the hypotheses and the experiments supporting them may be erroneously based. Thus we have no right to imagine that the inorganic preparations of iron have a stimulating power over the alimentary mucous membrane, or even if they have, that this power is exerted in the peculiar line of aiding in the absorption of the organic iron of the food. Again, the researches of Hamburger, Damaskin, Gottlieb, Muller, Jacobi and Socin which show that after the internal use of inorganic iron there is no increase in the iron in the urine, are valueless so far as the conclusions drawn by them are concerned, namely: that as there is no increase in iron in the urine there is none in the blood and therefore it is not absorbed. These conclusions are not justified, because they are based on the erroneous view that because iron is not in the urine it is not in the blood, and because it is not in the blood it is not absorbed. Every one knows that in the case of chronic lead poisoning when the body is saturated with the metal there is often no lead in the urine, the poison being deposited in the tissues, and if this is true of lead it may be of iron. Particularly is this to be remembered when we find Stockman quoting the researches of Mayer, Bidder and Schmidt and a host of others who have proved that we are not to look to the kidneys as the path for the excretion of iron, but to the intestinal walls. Finally, Stockman has proved that when iron is used hypodermically it cures anæmia when it can not stimulate the digestion or counteract sulphides.

Leaving the interesting and intricate subject of anæmia and its diagnosis and treatment we find another condition now recognized as a symptom, though still often classed as a disease, namely asthma. In reality asthma is no more a distinct disease than is dropsy. It is a manifestation of disease or disorder in other organs which result to some extent in local pulmonary signs. I need only mention the fact that every case of this condition will prevent some evidence of reflex irritation or other extraneous cause if it is carefully sought for, such as metallic poisoning, hay fever, cardiac, or naso-pharyngeal disease. We have therefore made an advance in the gradual knocking away of the props holding asthma on the pinnacle of being a distinct disease and in a given case must direct our diagnostic and therapeutic powers first to the discovery and removal of the cause and second to the relief of the local manifestation at the time of the attack, including too, in many instances the treatment of the secondary conditions caused by the paroxysm. It will be remembered that at one time we had two schools of thought concerning the actual local cause of an asthmatic seizure: the one claiming that the obstruction to respiration was due to swelling and hyperæmia of the mucous membrane of the bronchial tubes; the other that it was the result of a spasm of the muscular fibers of these tubes. Now we know that both conditions exist and that both are probably the result of irritation or perverted function of the vagus nerves, for the filaments of this nerve are not only supplied to the bronchial muscles but also the local vessels. Further than this, the peculiar relation of these important nerves to the cardiac, gastric and pulmonary area and to the recurrent and superior laryngeal nerves all tend to complete a chain of physiological evidence hard to equal, particularly when we remember that the vagus is the governing nerve of the respiratory function and that its origin is intimately associated with important vital centers and nerve roots in the medulla. Here, then, we have an improvement in etiological knowledge which enables us to discern a cause, and give an explanation of almost every empirical fact regarding the use of antiasthmatic drugs, since nearly every one of these we now know depends upon its action upon the unstriped muscular fibers, the vagus nerve or on the depression of reflex activity, for its therapeutic power.

There is still another condition which is gradually passing from the list of diseases into the list of symptoms, namely diabetes mellitus. Its passage from the dignity of a disease in itself to the less important place of a manifestation of a disease process underlying it, is only delayed because the physiologist and pathologist have not succeeded in fully explaining the process of sugar manufacture in the body in health and disease. Even at the present time we scarcely appreciate the numerous causes which have already been discovered as capable of producing this symptom. Not only does injury to Bernard's center in the fourth ventricle result in hepatic hyperæmia which in turn results in glycosuria, but section of the vaso-motor fibers in the spinal cord at such a point as to involve the nerves of the liver results in similar disorder according to Schiff. Pavy has proved that destruction of the superior and inferior cervical sympathetic has this effect and it has been known to follow intense inflammation or irritation of such nerves as the sciatic and trigeminus, and some have gone so far as to explain the glycosuria seen sometimes in those suffering from sciatica to the sciatic irritation.

Aside from these nervous factors governing glycosuria very much more recent studies have shown that the gradually growing recognition of diabetes as a symptom is founded on a sound basis, for we have now before us undeniable evidence that such a thing as pancreatic diabetes may occur. Years ago it was first noted as a physiological possibility, but the recent studies of Minkowski and von Mering with

several others have placed the entire question in a better light. Extirpation of this gland results in glycosuria but if one-fifth of it is left behind the sugar does not appear in the urine and this, with other facts, points to the pancreas having a power through a ferment rather than by its general secretion. Clinical cases are also now on record in which after death there has been found a condition of fatty degeneration or atrophy of the gland, either as the result of some morbid process or indirectly through the impaction of calculi in the pancreatic duct which led to fatty degeneration or a cirrhosis as in the cases recently recorded by Freyham. Therapeutics can do more for the diabetic than the pathologist can tell him of the cause of his disease, but the recollection that diabetes is a symptom of a number of conditions should lead the physician to the recognition of the fact that if a remedy successful in one case fails in another it is probably because he has failed to discover that the cause in each case is not identical.

The ability to apply observation to cases with resulting accurate diagnosis and still more accurate therapeutics can be admired in every instance where it is observed, but it would be difficult to name a more eminent illustration of the beneficent results of such a trinity of good offices than is pictured by the work of Lauder Brunton on the nitrites. Brunton had noticed two facts, the one in the sick room, the other in the laboratory. By the bedside he found that in many cases of angina pectoris a condition of intense arterial tension existed which was manifested not only in the cord-like condition of the arteries but also by the pallor of the skin due to contraction of the peripheral capillaries. This condition often preceded the attack of pain. Instead of tossing this discovery aside with the dogmatic belief that it was a secondary result of severe pain, he looked further to see if there was a causal relationship between the two conditions. Remembering that the over-distension of any muscular cavity such as the bladder or intestine results in pain, it occurred to him that a spasm of the arterial system might result in such over distention of the heart muscle, already feeble, as to cause the typical pain of angina pectoris and this hypothesis was supported by a recollection of several facts, namely, that exercise always produces contraction of the blood vessels partly by the contraction of voluntary muscles on large areas of capillaries by the increased demands on the circulation, and finally that it is in gouty persons with irritable blood vessel walls that angina pectoris most frequently asserts itself.

In the laboratory Brunton had found that the nitrites all lowered arterial pressure and by so doing caused the heart to empty itself very readily of blood, partly by depressing the vagus nerves and so permitting increased cardiac action. Here then was, in theory at least, the very remedy which should meet the indications in heart-pang and the practical application of the hypothesis has given us that valuable method of treatment so universally employed.

The interesting relationship between physiological and chemical research and practical therapeutics when they are associated through logical deduction can also be readily studied in the production and use of a number of compounds, but in none other more satisfactorily than in the nitrites. Chemistry showed the various combinations which could be formed in this series and proved that some of them were more stable than others, the pharmacologist showed that those who had stability were more slowly decomposed in the animal organism, and in consequence that their action was not so sudden nor so fleeting, and the therapeutist recognizing that an unstable preparation, such as nitrite of amyl, could only be used for momentary effects at once found the stable compounds of peculiar value when continued action was desired. It is because of this stability and consequent comparative slowness of action that the nitrite of sodium, potassium and nitro-glycerin find favor and that the still more recently employed and more stable compound, cobalto-nitrite of potassium bids fair to come into general use.

I can not leave this subject without pausing for the moment to insist on the importance of this question of seeking always for the cause producing any symptom, in order that our therapeutic measures may be well applied. Many of us have doubtless experienced in boyhood "the pain in the side" about the heart which was such an annoying and incapacitating complication of foot races or the game of hare and hounds. For a number of years I wondered what the explanation of this pain was, and still more why it passed away as the boy gets "his second wind." The reason is now evident. The first effect of severe exercise is to cause a rise of arterial pressure by reason of increased circulatory activity; this is soon accentuated by the obstruction offered to the flow in the capillaries of contracted muscles which ordinarily are vast capillary areas, and finally the effort generates an increased amount of carbonic acid gas in the blood which stimulates the vasomotor center and still further increases arterial resistance. As a result of these agents and the altered pulmonary circulation the heart becomes distended with blood and pain results. Almost at once, however, the natural demand for blood made by all organs when in activity causes secondary hyperæmia in the peripheral capillaries, the lungs are able to catch up to and eliminate the CO_2 and the heart is able to carry on its duty with ease, even though the excessive exercise be continued or in other words the boy gets his "second wind." There are good reasons, therefore, in the custom which prevails among some athletes of taking strychnine or caffeine or black coffee before a foot-race on the ground that it saves their wind. By means of these powerful cardiac and respiratory stimulants they enable the heart to overcome resistance and avoid distension of its cavities and also increase the ability of the nervous centers to discharge impulses which the nerve trunks may the more quickly carry to the more tributary muscles. Such a form of explanation underlies the pathology and treatment of "shock," a condition often wrongly treated because its rationale is not understood. All causes which give rise to great nerve impulses result in some degree or stage of shock and these states are chiefly manifested in the heart and vasomotor system. As has been well pointed out elsewhere, any frightened woman will exclaim, "you frightened me so my heart stood still," and a second later will remark, "just feel how fast my heart beats." The primary shock has so stimulated her inhibitory cardiac nerves that they at first inhibit the action of the heart muscle and then having acted excessively reaction sets in and they permit the heart to move on uncontrolled even to an ordinary degree.

This condition in a more or less modified form is found in all cases of "shock." It has been proved by experimentation on the lower animals that it is practically impossible to produce death by irritation of the vagus and we know that death rarely occurs in the first stage of shock unless there exist previously cardiac disease in the muscle or valves. We very rarely see shock in its first stage except in the man who has "his breath knocked out of him" by a blow, not over his lungs, but over the solar plexus which reflexly results in vagal irritation. It is the second stage of shock which we are called upon to treat. Here we have the entire vascular area in a condition of profound relaxation, a condition exceedingly dangerous to cardiac integrity. Nothing is more stimulating to a man in accomplishing a task than a moderate amount of opposition or number of difficulties, and nothing is more stimulating to the heart than the normal resistance offered by a blood pressure maintained by an intact vasomotor center. The blood vessels relaxed the heart pumps, as it were, into vacancy or as impotent of result and as exhaustingly as the wheels of an engine on a slippery rail. The result is rapid failure of the cardiac muscle by reason of futile endeavor and because the coronary arteries are imperfectly filled. The great arterial relaxation also results in serious changes in nutrition and the profuse sweat weakens and chills the body. It is at this time that the employment of belladonna or atropine becomes valuable in the extreme. By its peculiar influence on the vasomotor center it produces normal vascular tone, stops the leaking skin and steadies the circulation, simultaneously tending to raise bodily temperature. If at the same time hot coffee be given as a cardiac tonic containing heat, and strychnine is used we have a fulfillment of every indication.

Elsewhere I have called attention to what seems a common error on the part of many practitioners, namely, an unnecessary dread of good sized doses of strychnine. We frequently see $\frac{1}{60}$ or $\frac{1}{30}$ grain given at a time when better results would be obtained if $\frac{1}{10}$ to $\frac{1}{5}$ grain was used hypodermically. Profound collapse or advanced shock enable the patient to withstand large doses of this drug, as does severe pain enable him to withstand full doses of opium, and full doses must be used if good results are to be expected. The question of the effect of mental shock or fright upon surgical shock is of great importance. Even animals, when brought directly from the street to operating table, show these signs most markedly, and how often does the gynecologist try to get his patient away from the sight of the preparation for the operation, or away from the little children to whom the mother bids a tearful goodbye before going on the table for a severe operation.

A valuable illustration of advances made in our understanding of certain diseases is afforded by epilepsy. There is probably no one here to-day who does not remember the time when the seat of origin of the epileptic seizure was in dispute, some holding that it was due to disorder of the circulation at the base of the brain, and others that it arose from disturbance in the cerebral cortex. Thanks to the studies of Ferrier and a host of others in England and on the continent, we now know that true epileptic seizures have their origin in the cortex and practically nowhere else. This being known, the rationale of the employment of the bromides in this disease was speedily explained through the researches of Albertoni and of Seppilli, who found that these preparations so depressed the cerebral cortex in its motor area that far stronger currents were required to elicit muscular response when the animal was under the influence of bromides than when in his normal state or under the influence of the ordinary anæsthetics. At the same time that this depressant action of the bromides was discovered, its powerful influence as a depressant to reflex action became fully appreciated, and its influence in a convulsive disorder such as epilepsy became the better understood. It is true that there is still a great deal to be done before we discover the cause of the epileptic attack, or in other words, the changes in the cerebral cells which permit of epileptic discharges, but even in so strange a disorder there is reason to hope that improved methods of research may eventually remove this blot on the fair fame of modern pathology. Nor is this hope without foundation for its accomplishment. Those of you who have had the opportunity to study the elaborate research of Hodges of Madison, in this State, will already have reasoned that if the changes in the nerve cells produced by excessive exercise can be studied by means of staining and the microscope, that it is not impossible for the changes in epileptic cells to be noted by methods of a similar character, particularly as epilepsy is a disease which is seen in the lower animals as well as in man. While such studies as those which have just been mentioned show advances in the indications for and rational employment of drugs, instances are not lacking in which contra indications to the use of some remedies have been developed or the empirical knowledge of their contra indication explained. Thus it had been a recognized fact in therapeutics that quinine when given in full doses always caused an increase in the number and severity of epileptic seizures in those who were subject to this malady, but it remained for the experimental therapeutist to show that quinine stimulated the cerebral cortex and so caused increased irritability of the motor area.

Again, the knowledge of the depressant action of chloral on the motor tract of the spinal cord and the same effect of bromides on the sensory tracts has placed in our hands the best antidotal treatment for strychnine poisoning, while the discovery that conium produces muscular quiet by depressing the motor nerves and not by acting on the spinal cord shows us that in spinal convulsions its employment is irrational because it only blocks the pathway to the muscles instead of preventing the discharge of impulses by acting on the parts directly at fault.

The discussion of this topic would not be complete did I not refer to one very familiar example of the value of physiological and pathological research in relation to disease, namely, the discovery of the malarial germ and the fact that quinine kills this organism. Only ten years ago we were taught that the use of quinine in malarial disease was purely empirical and to-day its rational employment is accepted universally all over the world.

In our pride over our advances made because of good sense we should not, however, sneer at some improvement equally valuable which are in our hands to-day rather because good luck than by logical deduction. Thus the scarcity of quinine and its consequent high price forced the chemist to seek for a method of producing this drug by synthesis, and the result has

been not only the direct discovery of the value of salicylic acid in rheumatism, but indirectly the development of that invaluable class of remedies of which antipyrine is the chief. Nor does the value of acetanilide, phenacetine and antipyrine rest upon the action for which they were introduced into medicine, namely, the reduction of fever but rather upon their power, accidentally discovered, to relieve pain.

The value of some of the compounds derived from the same sources is in several instances quite equal to that of the integral parts. Thus salol is a remedy which many of us would no more dispense with in intestinal diseases than we would give up opium, quinine and digitalis.

Of the prospective value of the treatment of infectious diseases by infections of serum from those who have been rendered immune, of the promises held out to us by the pathologist of a more clear understanding of many puzzling diseases and of the possibilities of drug therapeutics in the near future I shall not speak. Much might be said of them, but in their present condition they exist more in the future than the present.

We are certainly passing through the golden age of medicine, and by the rational line of our advance are avoiding those theories which have misled our predecessors into beliefs since proved to be erroneous.

The American Medical Association not only links the profession into a chain which overcomes superstition and discovers fallacy, but by its ennobling influence produces unconsciously a wave of medical advance which sweeps on as grandly as does that of any other art or science known to man.

GOLD; WITH ESPECIAL REFERENCE TO ITS CLINICAL APPLICATION.

BY JOHN V. SHOEMAKER, A.M., M.D.
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Pharmacology.—The only form in which gold is officinal is that of the so-called double chloride of gold and sodium, a combination of equal parts of the two salts, the compound corresponding to 32.4 of the metal. Auric chloride, though itself soluble in water, is not well absorbed. The dose of the chloride of gold and sodium may be stated as from $\frac{1}{50}$ to $\frac{1}{10}$ grain.

The bromide has been employed, but has the disadvantage of being a less soluble salt than the double chloride. The bromide may be given in daily doses varying from $\frac{1}{10}$ to $\frac{1}{6}$ grain. The cyanide of gold has also been used. This salt is a yellowish crystalline powder devoid of taste, insoluble in water, alcohol and ether. The dose of the cyanide is $\frac{1}{50}$ to $\frac{1}{10}$ grain.

Physiological Action.—Concentrated preparations of gold have an escharotic effect when locally applied. When taken internally in small doses gold promotes the functions of the gastric tubules and hepatic cells. It consequently facilitates digestion. The composition of the blood is likewise favorably affected. The double chloride occasions constipation. A tonic and antispasmodic influence is exerted upon the blood by preparations of this metal. In some instances it produces exhilaration of mind. Gold contributes to vigor of the muscular tissue and strengthens the action of the heart. It is thought to have a decided aphrodisiac effect. In men it may give rise to painful erections and in women may increase the menstrual flow. It excites the action of the kidneys, augments the quantity of urine and communicates a yellow color to that fluid.

Large doses of gold excite salivation without producing any effect upon the teeth or gums, diminish the oxidizing power of the red blood corpuscles and give rise to what has been called auric fever, in which the perspiration, saliva and urine are increased. Metabolism of tissue is rendered more rapid and waste is in excess of repair.

Excessive doses are followed by the phenomena of irritant poisoning, gastro-enteritis with burning pain along the alimentary tract, vomiting and retching, depressed circulation, etc. The antidotes to this condition are albumen and demulcents.

Gold is eliminated chiefly by the kidneys, but to some extent by the liver and bowels.

Therapy.—In chronic dyspepsia due to depressed vitality with deficient secretion of the digestive fluids, the administration of small doses of chloride of gold and sodium is frequently attended with much improvement. This remedy is of especial service in derangements of digestion caused by nervous strain, such as anxiety, suspense, dread of misfortune, excessive devotion to business, etc., influences so common and so potent in modern life. The reflex influence of dyspepsia upon the nervous and circulatory systems is also relieved by the employment of the double salt of gold and sodium. Vertigo dependent upon disturbed digestion is often notably benefited. Preparations of gold are likewise serviceable in the treatment of chronic gastric or gastro-duodenal catarrh. The physical and mental symptoms associated with habitual inactivity of the liver are favorably influenced by the administration of the double chloride. A case aptly illustrative of dyspeptic and nervous trouble due to sluggish liver, in which marked improvement attended the administration of gold, may here be briefly described:

A man thirty-four years of age, of sallow complexion and subject to occasional attacks of jaundice, had suffered for three years from labored and painful digestion. His bowels were habitually constipated, the alvine evacuations being dry and putty-like in appearance. He was subject to numbness and prickling sensations in various portions of the body. He complained of frequent attacks of headache, lack of attention and memory and a loss of self confidence. He was habitually troubled with insomnia.

Gold is of avail in certain structural diseases of the liver. In acute yellow atrophy, before degeneration of the hepatic cells has taken place, Professor Bartholow has suggested that the chloride of gold and sodium might stay the progress of the degenerative alterations. The same writer believes that the preparation just named has some real power in arresting amyloid degeneration of the liver. I have witnessed good results in the early stages of cirrhosis of the liver from the employment of the remedy. It checks the production of interstitial connective tissue and is perhaps able to cause absorption of the newly formed material. Reference may here be made to two cases of cirrhosis of the liver in which the chloride of gold and sodium was serviceably employed:

A woman fifty years of age, stated that she had generally enjoyed good health. Many years previously she had suffered from attacks of intermittent fever but had never had articular rheumatism. Three

weeks before coming under observation her abdomen had enlarged. Her urine was scanty and high colored. During the last month or two her appetite had failed. There were no decided symptoms of indigestion. There was no œdema of eyelids or ankles. The patient was troubled with shortness of breath. She had had no hemorrhages from the stomach or bowels. The area of liver dullness was slightly diminished. The abdominal enlargement was due to beginning ascites. The liver had begun to contract, though there was not as yet much decrease in its volume. The patient was placed upon a mixed diet. In addition to the gold the medicinal treatment consisted solely of an occasional dose of compound jalap powder. In two weeks' time the effusion had sensibly lessened, the patient felt more cheerful and the appetite had improved. In this bettered condition she has remained for more than two years without recurrence of the ascites.

A man forty years of age, had had a capricious appetite and feeble digestion for about two years. During much of that time he had been troubled by vomiting after breakfast and irregularity of the bowels. The urine had for a long time been habitually scanty and high colored. Upon one or two occasions he had vomited blood. He had within two weeks begun to rapidly lose flesh and strength. The liver dullness seemed normal in extent. The result of treatment in this case was very satisfactory. Under the influence of gold the fluid was absorbed, the digestion improved, the man regained flesh and strength and regards himself as entirely cured. There has been no return of the ascites for three years.

Sclerosis of the kidney is effectively influenced by the same means. In other forms of renal disease associated with albuminuria, gold will not infrequently be found to serve a good purpose. Dr. G. Frank Lydston of Chicago, has recently reported a case of pyelitis in which the symptoms were materially ameliorated by the hypodermic injection of chloride of gold and sodium.

In certain disorders of the nervous system gold is decidedly beneficial. It has been recommended in whooping cough, laryngismus stridulus and persistent hiccough. I have observed good results follow its use in hysteria, hypochondriasis and melancholia. A typical case of hypochondriasis may be cited in evidence of the efficacy of this remedy:

An active business man about fifty years of age, of limited education but who, by intense and anxious application had acquired a competence, had generally been healthy until six months previously, when he had been attacked by some cutaneous disorder which, judging from his description, was ecthyma. No history of syphilis could be obtained, and an anti-syphilitic course to which he had been subjected had rather aggravated than improved his condition. After the sores had healed the man was suddenly seized with abnormal nervous sensations. He felt as if an indescribable something had entered his head. He became pale and nervous. From that time onward he was the victim of numerous nervous manifestations. The man became subject to pain which was sometimes dull and at other times sharp. The pain affected different portions of the head. He also suffered from smarting, tingling, burning and crawling sensations of the scalp and face. Fibrillar twitchings of the facial muscles could be both seen and felt. The upper limbs felt numb and at times he had a sensation that his whole head was swollen. He was greatly troubled by insomnia, so that often he dreaded to go to bed. He would, after sleeping a few hours, awake feeling as if he had no control over himself. He would get out of bed, would feel weak and have palpitation of the heart and shortness of breath. The patient also suffered from a dread of being alone or walking the streets alone. Gradually he became afflicted with flatulent dyspepsia. When the digestion was especially at fault the nervous manifestations became more severe. His mentality became strangely affected. In the early period of his malady he was accustomed to fancy that when the sores had been healed some morbific entity had been driven into his system. Subsequently this idea was replaced by others which gradually rose to the rank of delusions. The patient continually brooded over his condition. He abandoned his business almost entirely, though when he succeeded in forgetting for a little while his ailments and applied his mind to business his judgment was as good as ever and his memory was unimpaired.

Dr. Goubert advocates the administration of bromide of gold in migraine, chorea, exophthalmic goitre and epilepsy. He gives the salt in solution in the daily dose of $\frac{1}{10}$ to $\frac{1}{6}$ grain to adults and from $\frac{1}{25}$ to $\frac{1}{10}$ grain to children.

The chloride of gold and sodium has proved of service in posterior spinal sclerosis. The shooting pains are alleviated, the incoördination becomes less marked, or at least does not increase, and the course of the affection is arrested. These results depend upon the influence of the remedy over the pathological formation of fibrous tissue.

The tremors due to cerebro-spinal sclerosis were markedly diminished in the case of a woman fifty-three years of age. The muscles of the limbs were habitually tremulous. Disordered mobility was but slightly perceptible in the face. The woman suffered also from attacks of vertigo. The act of walking was not much impeded, but the patient was easily fatigued. A very noticeable improvement was produced by the persistent employment of the chloride of gold and sodium.

In senile vertigo due to arterio-sclerosis the effect of gold upon the processes of nutrition is attended by relief of the alarming symptoms. In this connection a clinical case may be mentioned: A gentleman sixty-eight years of age, of good personal history and habits, had led a laborious life until within a few years past, when he was obliged to retire from business. He was a slender built, wiry man, and had always been strong and active. His muscular strength, however, began to decline, he suffered from sleeplessness, his appetite decreased. Being without occupation he began to amuse himself by taking long daily walks through the city streets. After a time he experienced occasional attacks of vertigo. Finally in a sudden accession of giddiness he fell heavily to the ground, and sustained a lacerated and contused wound of the scalp. When I visited the patient, several hours after the accident, I found, though he had recovered consciousness and was strong enough to sit up, that the cardiac action was weak, that the radial arteries were slightly hardened and that the arcus senilis was present. Rest in bed for about a week, symptomatic treatment and careful nursing measurably restored his strength. Some suppura-

tion attended the wound, but in about three weeks it was entirely healed and the man was able to take a short walk out of doors. He was then placed upon the chloride of gold and sodium. A month subsequently he expressed himself as feeling better than before the fall. The heart was stronger, his breathing was less short, his appetite was good and his general condition equal to that of most men of his age. There had been no return of the vertigo. He was cautioned against hearty eating and especially against long walks. He then went into the country and spent some months, taking carriage rides and walking but short distances. The use of the gold was continued during this period. Upon his return he informed me that during the interval he had remained entirely free from vertigo.

In disorders of the genital apparatus gold has a sphere of usefulness. Amenorrhœa not dependent upon obstruction will often yield to the influence of gold. The double chloride is the preparation which I have used in treating this condition, but Oesterlen reports equally good results from exhibition of the cyanide, which he preferably gives made into tablets with chocolate. Functional dysmenorrhœa is notably relieved by the use of gold. Chronic inflammation of the womb or ovary is also benefited by the employment of this remedy. Cases have been reported in which it served a good purpose where a habitual tendency to abortion was present, the fœtus being carried by its aid to full term and a living child being born. Gold is advantageously used in the treatment of functional impotence.

From the beneficial effect which this metal has upon nutritive processes it exerts a reconstituent influence in a number of constitutional disorders. First among these may be named syphilis. Gold is efficacious in the treatment of the secondary manifestations, but it is more especially in the later stages of the disease that its value is most apparent. It may very serviceably replace, alternate or be combined with the corrosive sublimate, and is of signal service in those cases in which the mercurial is badly borne. In syphilitic ecthyma, rupia, ulcerated syphiloderm or gumma, and in syphilitic ulcers of the throat, the chloride of gold and sodium has been found of utility. I have often employed this remedy in these conditions, and generally with advantage. In ozœna, syphilitic disease of bones, muscles and viscera gold should be thought of whenever the patient is not benefited by the remedies more usually employed. Syphilis of the lung or nervous system is often remarkably relieved by the administration of gold.

The double chloride of gold and sodium is an efficient remedy in scrofulous adenitis. If caseous change has not yet occurred the swellings are reduced in size, the patient gains in weight, the flesh becomes more firm, appetite and digestion improve. If degeneration has taken place the work of repair is promoted and the scarring is reduced to a minimum. The case of a girl aged fifteen years, affords a good illustration of the value of gold in scrofuloderma. She had been subject for two years to glandular enlargements in the neck. Many of the glands had degenerated. Several sinuses, the floors of which were covered with cheesy material, were in existence and communicated with each other. Upon both sides of the neck glands were found exhibiting different stages of disease. A thorough operation seemed unquestionably demanded, but to this the patient would not submit. The double chloride was administered for several months, and at the expiration of that period the sinuses had healed and suppuration was arrested. The tumefied glands shrank to a size approaching the normal. The result, as far as healing was concerned was satisfactory, though the disfigurement was greater than if the case had been seen earlier or operative measures had been allowed.

The administration of gold is productive of good results in ulcerated lupus. The surface of the obstinate sores exhibit more activity, the granulations become more healthy in appearance and ultimately cicatrization is accomplished. Dr. Joseph Drzewieck of Warsaw, Poland, also testifies to the efficacy of gold in lupus. The author quoted administered the chloride of gold in doses of $\frac{1}{150}$ grain three times a day. The same writer states that gold is now being used in the hospital at Warsaw in the treatment of phthisis.[1] The chloride of gold and sodium enters into the plan of treatment of tuberculosis proposed by Drs. Shurley and Gibbes. Alternating hypodermic injections are made of the double salt and iodine. The authors have reported a series of cases in which their method was attended with improvement of the signs and symptoms of the disease. Favorable communications have been published in regard to the efficacy of this method by other observers.

The chloride of gold or the chloride of gold and sodium may prove of service in the treatment of the alcohol habit. Injections of the metallic salt will probably do good by exerting a corroborant influence upon the nervous system and weakening the craving for alcoholic drink. Dr. E. M. Hale has reported a case of chronic tobacco poisoning accompanied by a condition of extreme prostration and a state resembling incipient delirium tremens. The chloride of gold and sodium was administered in the dose of $\frac{1}{60}$ grain before each meal and upon going to bed. The serious condition was entirely overcome. Dr. Hale has also made use of the same remedy with advantage in the treatment of morphine addiction.

The subcutaneous injection of gold is said by Calmette to be antidotical to the poison of the cobra di capello. This observer made fifty-two experiments upon various species of warm-blooded animals. He is of the opinion that the venom may be neutralized even after it has been absorbed, and that the treatment may be successfully applied to human beings.

Cases of diabetes mellitus have been reported in which the employment of gold has restrained the excessive thirst and discharge of saccharine urine. The remedy is said also to be of service in checking the advance of premature senility.

SQUINT AND ITS TREATMENT.

Read before the Meeting of the Illinois State Medical Society, May, 1893.

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We understand by squint or strabismus that condition of the eyes in which the visual axis of one deviates from the visual axis of the other, when in a position of fixation upon an object.

[1] Annual of the Universal Medical Sciences, Vol. v, 1892.

The normal position of the visual axis is parallel when the eyes are fixed upon a point at an infinite distance, and more or less convergent when fixed upon any object nearer than infinity.

Paralysis of any individual or group of the extrinsic muscles of the eye would give rise to a disturbance of this adjustment of the visual axes and cause paralytic strabismus.

In this, the movements of the affected eye would be more or less restricted in those directions controlled by paralyzed muscle, and there would be a corresponding deviation of the axis of the eye; while in movements in other directions it would follow the sound eye and the axes would be normal.

In the condition known as concomitant strabismus, which it is the purpose of this paper to consider, there is no paralysis, for the squinting eye follows the other in all its movements. Furthermore, the same angle of deviation from the axis of the sound eye is maintained in any position the eyes may assume, whereas in paralytic squint, the difference between the two becomes more marked when the eyes are moved in the direction of the paralyzed muscle. In concomitant strabismus the sound eye takes a faulty position whenever the unhealthy one fixes upon an object. For example, if the healthy eye is covered with a card, and the squinting eye compelled to fix upon a certain object, as the surgeon's fingers held up at a distance of a foot or two from the face, the sound eye will be noticed to deviate from the normal position, and in fact to deviate to the same extent that the unhealthy one does when both are uncovered.

This secondary deviation, as it is called on the part of the sound eye, is always equal to that of the squinting eye.

We have furnished here one of the most characteristic differential points between concomitant and paralytic strabismus, for in the latter the secondary deviation is much greater than the primary.

Concomitant squint may assume any one of four directions—inward, outward, upward or downward, of which the inward, the convergent form, is by far the most common while the next most frequent is the outward or divergent variety.

In looking for the cause of convergent strabismus, several factors have to be considered. In a large majority of cases, as was first shown by Donders, there exists a certain amount of hypermetropia and on account of this the relation between accommodation and convergence is disturbed. The same nervous impulse that brings about the act of accommodation, also excites the act of convergence in order that there may be binocular vision. In hypermetropic eyes the impulse to accommodation necessary to focus rays coming from a near object would require to be stronger than if the eyes were emmetropic, while the degree of convergence required would not have to be increased. Hence results a lack of harmony between accommodation and convergence and for a long time this was adduced as the dominant cause of convergent squint.

Although this may be one of the influential factors in the production of squint, there are some very potent objections to the view that it is the only cause, among which are the facts that all eyes affected with hypermetropia do not squint; and that even in the high degrees of it in which, according to the theory of Donders there should be extreme strabismus, there is very often none. Further, this theory does not explain the convergent strabismus occurring in myopes or emmetropes who make no excessive efforts of accommodation.

Schweigger's theory sets forth that the cause of the convergent form is to be found in the lack of equilibrium between the internal and external recti muscles and that there is an insufficiency of the externus owing to lack of development or an abnormal thickening and shortening of the opposing muscle.

Hansen Grut considers that the shortening and thickening of the internus is one of the main factors in the production of convergent squint and that this is brought about by excessive and prolonged innervation of these muscles.

The size and shape of the eyeball and orbit may also play a role in the production of this condition; if the eyeballs are short and widely separated from each other, and the orbits deep, it can readily be understood how such eyes would have more of a tendency to converge than eyes with long antero-posterior diameters placed in shallow orbits.

In a very great number of these cases, according to Schweigger 30 per cent., to Nagel 70 per cent., there is defective visual power or amblyopia of the squinting eye, amounting in some cases to almost complete blindness, so that the patient is unable to see even the largest letters. In such cases there is very little change in the ophthalmoscopic appearance of the eye; perhaps a bit more pigment around the disc, or a faint discoloration of it, or a slight stippled condition around the yellow spot, that in other cases would hardly attract attention.

It is quite fair to assume that in many of these cases the amblyopia is congenital, and not the result of want of use resulting from defective refractive conditions of the eye, for in many the error is so slight that it is scarcely conceivable how such a change could be effected thereby. But in other cases the refractive element seems to be a prominent cause of the amblyopia, as well as of the strabismus and it is in this class that real improvement in visual acuity may result from wearing glasses that fully correct the ametropia.

The true cause of the amblyopia in many cases is possibly to be sought for in a lack of development of the perceptive centers; so, it is not unlikely that the delicate nerve centers that preside over the innervation of the muscles of accommodation and convergence may be at fault so that an incoördinate action of the extrinsic muscles of the eye results.

Defective outward mobility, particularly of the squinting eye, is frequently seen, showing the weakness of the externus; and examinations in numbers of cases go to prove that defective abductive power is a very prominent factor in the causation of converging strabismus.

The cause of divergent squint is most frequently to be found in myopia. The myope, being compelled to hold objects very near to get the best vision, weakens his interni muscles by excessive use and allows the externus to draw the eye outward.

A squint may be permanent or it may be periodic, in which case it occurs usually when some great effort of accommodation is made.

It may be monocular or it may be alternating, in which case either eye will be able to fix upon an object, the other squinting in the meantime. In the

latter variety it is usual to find that the vision is fairly good in both eyes, while in monocular squint the unsound eye is frequently amblyopic.

Treatment.—The results aimed at in the treatment of squint are the relief of the unsightly deformity and the restoration of binocular vision, if this has ever existed. The value of a full correction with suitable lenses, of errors of refraction in children or older patients who show a tendency to squint, has become very widely reocgnized among specialists. Children as young as two years may be provided with glasses, and by this means many of them will be prevented from acquiring the habit of squinting. In many cases of the periodic and alternating forms of the affection it is very probable that the anomalous refractive condition of the eye is largely accountable for the establishment of the squint, and that if the error be corrected by proper glasses, an important exciting factor will be set aside. Furthermore, it seems probable that in a considerable proportion of the cases belonging to the above mentioned classes, a part if not all of the amblyopia is dependent upon the error of refraction, and is the result of imperfect functional development of the retina, or of the perceptive centers occasioned by imperfect visual impressions. Such a view is suggested by the fact I have repeatedly seen demonstrated, that a full correction of hypermetropia and hypermetropic astigmatism in cases in which the vision is considerably impaired, has often the effect of markedly improving the sight. Such cases go to sustain the theory that the amblyopia is "ex-anopsia," and that because since birth the retina has never received distinct images it has failed to develop its complete function. Accordingly in all cases showing any tendency to development of squint, glasses that fully correct the hypermetropia and astigmatism should be constantly worn. We can not promise that in all cases the result will be satisfactory; probably it will not be so, in those in which congenital amblyopia not due to refractive error exists.

It is in children that the test known as retinoscopy or sciascopy is peculiarly valuable as a means of determining the refractive condition of the eyes. With it the total amount of ametropia together with the astigmatism can be estimated more accurately than can be done with the ophthalmoscope and the ophthalmometer, although the value of the latter instrument for determining the degree and the meridians of astigmatism is a settled matter.

In conjunction with the treatment with glasses, the child may wear a bandage over the sound eye for several hours a day to compel the weak one to exert itself and to fix upon objects, in the hope that the vision may thereby be improved.

In many of these cases, however, nothing short of operative treatment will avail, but before this is attempted a careful consideration should be given to certain points. As stated above the refraction should be examined, and if the patient is old enough to read, a test of the acuity of vision should be made with the test letters, and also an examination to determine the presence or absence of diplopia. If the latter exists it indicates that the sight of the squinting eye is still good, and there may be hope of restoring binocular vision by the use of correcting glasses after the operation. The angle of deviation should also be carefully measured with the perimeter, and at the same time and in the same way the lateral mobility of the eyes, especially the mobility outward of the squinting eye, should be estimated. It is not considered advisable to operate on children under the age of six years, and even after that age not until glasses have been given a thorough trial. Particularly is this true in cases of alternating squint, in which it is probable that the difficulty is occasioned by a hyperopic condition of the eyes. In quite a number of such cases the squint disappears before the age of puberty is reached, so that if an operation of dividing the tendon of the internal rectus were done early in life a deviation outward might subsequently develop. The operation for the relief of convergent strabismus may be either a tenotomy of the internus by which the adductive power is diminished, or an advancement of its opponent the externus, by which the adductive power is increased; or a combination of both may be practiced. If the deviation amount to 15° or less and the outward mobility of the squinting eye is good, a tenotomy of the internus will correct the error; while if the squint measure between 15° and 30°, tenotomy of both interni will be needed, or in the event of the externus being too weak, tenotomy of the internus combined with advancement of the externus. Division of the internus will usually effect a correction of 15°, but this may be still further increased by loosening the attachments of the capsule of Tenon. This, however, should be cautiously done, lest the power of the internus be permanently weakened by the muscle slipping too far back.

In very many of these cases the externus is either abnormally weak, or it has its attachment so far back that it has not the control over the eye that it should have. It is certainly more rational to strengthen the weak muscle than to attempt to correct the deformity by weakening a muscle that, in very many of the cases, is only relatively too strong. I think, too, it is possible to gauge the effect more accurately by this procedure, even in a low degree of squint, than by making a complete tenotomy on one eye with possibly a subsequent one on the other. This applies especially to those cases in which one eye is distinctly amblyopic and in which the deviation is 25° or 30° or more. To do a double tenotomy in such a case would not be as rational treatment as to operate on the affected eye alone with a tenotomy of the internus combined with advancement of the opponent.

De Wecker practices what he calls capsular advancement, which consists in bringing forward the capsule of Tenon at the point of attachment of the opposing muscle, without dividing the tendon itself. In slight cases this answers every purpose. It is better to leave the eye slightly convergent after operating, as the effect of the treatment is likely to increase.

In the divergent strabismus of myopia, caused by the weakening of the interni from excessive use, as was mentioned, the most scientific treatment is an advancement of the internus rather than a division of the externus, which would still further limit the mobility of the eyeball. That this unsightly deformity of squint can be safely and satisfactorily removed there can be no question; and it has also been indubitably demonstrated in the experience of many that in a fair proportion of cases the restoration of useful binocular vision is quite possible.

70 State Street.

ADDRESS ON GENERAL SURGERY—SURGICAL PROBLEMS.

DRAINAGE—RADICAL CURE OF HERNIA BY OPERATION—APPENDICITIS.

Delivered before the American Medical Association at the Forty-fourth Annual Meeting held in Milwaukee, June, 1893.

BY H. H. MUDD, M.D.

ST. LOUIS.

The exact clinical value of surgical procedures can not be determined by individual opinion, and statistics are often misleading. New ideas are quickly tested in the hope that they may solve some of the old problems. However brilliant new theories in surgery may appear, they often find very narrow limits in the practical work of the surgeon. Many of you are not surgeons, yet every one is interested in surgery and its problems.

Old questions—of universal interest and general importance still have their lines of use and abuse ill defined.

The authoritative teaching of many surgical writers suggest that all surgical problems are either satisfactorily solved or will soon find definite solution through the new facts so persistently presented for consideration. Original research and experimental operations have done so much for modern surgery that we are loth to admit that any good can come from the consideration of things not new. Yet many so-called brilliant discoveries and fashionable fads in surgery could have been eliminated from the legitimate field of surgical endeavor by the exercise of common sense and moderate caution.

It might astonish one not thoroughly familiar with the practice of medicine and surgery to know that the question now most prominently before the surgical mind is one which has been discussed and considered by surgeons for centuries.

Surgeons who are familiar with the history of the use of drainage in the treatment of wounds must recognize the fact that the simple details of the management of wounds are shifting and uncertain quantities. Authoritative teaching, plain, blunt dogmatic statements are impressive and convey definite ideas to all of individual work and opinions, but they may not express general facts in medical or surgical practice.

The question of drainage and drainage tubes has been under discussion by the leaders in surgical work for many generations. For the past twenty years the data for the solution of the problem of its proper place in surgical practice have been rapidly changing and becoming more definite.

Surgical cleanliness has taught us that drainage is not essential to the rapid healing of grave and extensive wounds. This advance has clearly defined a marked difference in the object to be obtained by primary and secondary drainage. No intelligent surgeon is ready to discard the use of secondary drainage in suppurating wounds, but there are many who assert that they do not use it in fresh, clean wounds, no matter how extensive they may be. The interest in the controversy has been narrowed down to the use or abuse of drainage in operative wounds which are clean and aseptic. It must be awarded a new place now, when perfect cleanliness is supposed to accompany every fresh wound.

It was an essential in the treatment of all wounds of any size in pre-antiseptic days. It has held its place fairly well during the past twenty years while antiseptic surgery has been readjusting the technique of all operative procedures. Old operations have been discarded and new ones devised, but the drainage tube remains with us seeking a new position at the hands of individual surgeons.

Union by first intention may be expected in a clean, incised wound not irritated by applications, with hemorrhage controlled, with perfect approximation of the divided tissues and with the individual rest and the injured tissues immobilized. Two essential factors must be added to the ideal wound to secure this good result, viz: a vital power in the individual sufficient to insure the establishment of nutritive processes and a proper resisting power of the parts involved in the wound. It may be said that the two latter conditions are necessary to heal a wound by granulation. This is true, but conditions of nutrition are changeable, and the patient who to-day is depressed and with no recuperative power, may in a few days be in a condition to supply sufficient pabulum for the healing of a wound not only by first intention, but by the still more exhaustive process of healing by granulation. Drainage here would be a safeguard.

Can we dispense with the drainage tube in all so-called clean wounds? I think not. Antiseptic surgeons assert that every operative wound can be made aseptic, and by a proper technique union by first intention can be secured. What are the conditions to be fulfilled to attain this end with a patient in fair general condition?

1. An incised wound.
2. A thorough hemostasis.
3. A perfect approximation.
4. The immobilization of wounded surfaces.

In traumatism the first condition is very generally absent, though the wound will frequently heal promptly notwithstanding the contusion and laceration present, for the vitality of the individual and the local resisting power are apt to be of the best.

The second condition is not always to be obtained easily. Ligatures must be applied, oozing controlled by forceps, by pressure or by firm sponging, and the surface must be left free from blood clots. The rough handling of the tissues necessary to attain this condition devitalizes the surface of the wound. The prolonged effort to control oozing of blood, the numerous ligatures required to check all bleeding points, and the irritation of the tissues occasioned by the effort to check hemorrhage sufficiently to insure the wound against effusion and coagulation of blood is no doubt often more disastrous to primary healing than the use of drainage.

The time required to accomplish thorough arrest of bleeding is a matter of serious import to the patient in many operations. It prolongs anæsthesia, and this is one of the dangerous conditions in many of the capital operations where the circulation is disturbed and the nervous system depressed. Many patients die, not from the immediate effect, but from the influence of the depression which follows its prolonged use. The bruising of tissues, the pressing into the tissues of germ laden dust, the longer exposure of the open wound, all make less perfect the asepsis which even the strongest advocates of antiseptic surgery admit is not an ideal condition, but is only accomplished in a relative degree. It is a practical asepsis, not an absolute one.

The perfect approximation necessary to promote the prompt agglutination of the severed surfaces by the use of the buried sutures is not attained without loss of time and further injury to the tissues affected. The buried suture is an essential factor in the perfect approximation and support of large wounds which is necessary to secure primary union.

The immobility of the injured tissues can not always be assured

Healing without drainage is the ideal wound treatment, but like many ideals, the effort to obtain it is too expensive to the patient to make it always desirable. The antiseptic surgeon claims that there is great danger of infecting the wound through the drainage tube, yet in any wound where the conditions necessary for healing by first intention pertain, the tube can be removed within thirty-six hours, and with a little care it can be so arranged as to be accessible without disturbing the deeper dressing. There is less danger of infection through a drainage tube used for primary drainage and promptly removed within two or three days than there is in the retention of serum and blood with the few dust germs which will adhere to the surface of the wound in the operating room. These will be washed away with the serous oozing that is carried off by the tube. The wound surface being dry, not irritated by retained blood and serum, will be able to care for any moderate infection of the wound. The phagocytes of Ketschnikoff will be in condition to destroy any isolated colonies of bacteria which may have been left on the fresh wound surface.

The infection of a wound through a drainage tube may be and is difficult to avoid where its prolonged use and frequent cleansing is necessary, or if used for the secondary or pus drainage. It should be easily prevented by those who are so strong in antiseptic methods as to be sure of perfect antisepsis in every fresh wound, where it is removed from the wound after twenty-four, thirty-six, or forty-eight hours. Much confusion has arisen in the vague conception of the time necessary to effect primary drainage in a fresh wound, many surgeons retaining it so long as any secretion oozed from it. The drainage tube is an irritant and will maintain a discharge, but its purpose as a primary drain should be fulfilled in at most sixty hours.

Subcutaneous exudates, or blood clots may be cared for by the healthy tissue which surrounds them, but it is always at the expense of time and a certain amount of sapræmia or septic intoxication. Often the tissues are overburdened and remain for a long time inactive in the face of such a condition. A large incised wound with skin securely closed and every avenue for the escape of blood or serum cut off will often show the swelling and œdema that tells of the existence of a serous exudate which has infiltrated the tissues about the cut surfaces, or has separated them so as to form a pocket filled with serosangunolent fluid. This must be absorbed or decompose, or it determines suppuration. This condition tells of added work put upon the injured tissue because a drain was denied by the surgeon. The frequency with which extensive wounds will heal without primary drainage will depend very much upon the gentleness, the patience, the methodical habits and the tact and skill of the surgeon. Sir Spencer Wells in his wide experience in abdominal work rarely used drainage. Modern operators, in the same department of work use it more freely than do any other class of surgeons.

It is true that tubal surgery has brought the surgeon more frequently into contact with pus than when he dealt chiefly with abdominal tumors. Yet I believe the painstaking care with which Sir Spencer Wells cared for the details of hemostasis, the toilet of the peritoneum and the replacement of parts enabled him to accomplish something of the same result that is now secured by the use of drainage by modern gynecologists. Practical refutation of the danger of the drainage tube is given by Tait and others, yet careful experimental research has shown that it is a difficult matter to maintain a drainage tube aseptic, when its prolonged use necessitates frequent dressings of the tube. Theoretical and clinical considerations incline me to the opinion that the presence of a drainage tube, in fresh wounds for twenty-four or forty-eight hours, protected as it is by antiseptic dressings, is a much safer proceeding than to overburden the wounded surfaces with the absorption of bloody serum which serves as a matrix for bacterial growth. The tension of the tissues in such a wound irritates and disables the tissues from effective phagocytic action. I believe the establishment of the conditions necessary to the healing of all fresh wounds by first retention without drainage, is accomplished at the expense of so much time, and such injury to the tissue that the drainage tube in many of the larger wounds and more serious operations is a conservative and protective measure. Soap, water and heat excluded, I should be more willing to give up all antiseptics than to dispense with the drainage tube, yet it can now more nearly be eliminated from practice than ever before and its use for primary drainage is largely limited by antiseptics, asepsis and buried sutures. Its gradual elimination from use in fresh wounds is one of the distinct advances of the day, for it can be safely dispensed with in many extensive wounds and should be excluded from the treatment of minor surgical operations when the wound is clean, the hemorrhage is controlled, the approximation is secured and the rest of the part is insured.

Another problem quite as old in surgery as drainage is still before us in the possibility of securing the permanent surgical relief of hernia. Are we in a position to warrant us in urging the operation upon those afflicted with rupture?

A permanent cure in children is established in many cases by the restraining influence of a truss. In individual cases where this permanent retention of the herniated viscus is possible during childhood it should be given a full trial before resorting to operative measures since they are still uncertain in their results.

The cure of hernia in adults by truss wearing is an improbable event, and should not influence the decision against operative relief.

Surgical relief is offered by many surgeons to the patient with rupture, but the multiplicity of methods still advocated to secure a radical cure attest the fact that the problem has not been satisfactorily solved. Individual operators have changed the details of their peculiar method so often that as yet no one can be said to have finally determined the mooted points of theory or practice.

There are so many factors entering into the problem that the statistics do not even give an accurate

estimate of the immediate mortality. The wide difference in the character of the cases selected for operations by different surgeons make the statistics misleading, not only for determination of the mortality, but still more so for establishing the percentage of permanent cures. The mortality is, however, so low, about 1 per cent. that it justifies the operation if a majority of the cases are permanently cured. I have no doubt that relapses are more frequent than any tables so far published would indicate. The difficulty of obtaining the ultimate result in any individual list, or in all of the operations performed is too great to have permitted any accurate percentage of relapses to be established in the few years which have elapsed since new operative methods have been practiced.

Permanent recovery follows operative effort, I believe, in from 60 to 80 per cent. of the cases. Even the lower per cent. justifies continued operative effort.

It is not my purpose to discuss the merits of the different operative procedures. They are too numerous and the details too complicated to warrant such an effort. We may, however, review some of the points in question.

McEwen alone advocates the retention of the sac. Nearly all surgeons remove it. It is agreed that its obliteration is necessary to secure a good result. The origin of congenital hernias, and of many acquired cases has been ascribed to the pouch formed in the peritoneum at the internal abdominal ring. Efforts have been made to prevent any puckering of the peritoneum at this site by cutting off the sac high up and placing the ligature so high that the tension on the peritoneum will prevent the pouching. Others sew the edges of the peritoneal section so that a line only may remain as a cicatrix at the site of its removal. The neck of the sac having been ligatured, is by others carried away from its normal position and fastened by suture to the abdominal wall. The peritoneum may be pulled down from one side of the hernial opening so that when the ligature is placed and the sac cut away the tension of the peritoneum will pull the puckered cicatrix to one side. I can not conceive that one method is much superior to another. The simple ligature placed well up on the peritoneum above the neck of the sac is as efficient as any; for the pliable peritoneum will follow the irregularities of the abdominal wall very closely.

If the funnel shaped pouch formed in the sac at the internal abdominal ring favors the development or the recurrence of hernia the more important point in guarding against its reformation will be found in destroying the normal irregularity in the abdominal wall formed by the transversalis facia and the muscles at the internal abdominal ring. This can be most efficiently done in the effort to give new strength to the parts involved in the hernia by a removal of the cord to a new point for its passage through the abdominal wall and in the efficient approximation of the fasciæ, the muscular, and the aponeurotic tissues of the diseased inguinal canal.

How can we maintain an opening for the transmission of the cord, with a minimum of weakness at the site of the canal? There are many reasons to think that Lucas Champaniere is right when he asserts that the restoration of the canal is an important matter. McBurney practically says the same thing when he closes the wound by granulation tissue. Halstead suggests the same as a fact. R. Frank proposes to carry the cord through a groove in the pubic bone. Lucas Champaniere appears to be indifferent to the situation of the point of emergence of the cord but brings it directly through the muscular and aponeurotic wall to the subcutaneous cellular tissue whence it descends covered only by the skin and cellular tissue to the scrotum.

The liberty thus taken with the position of the cord may enable us to bring it out through some stronger part of the abdominal wall, preferably to the outside of the canal near Ponpart's ligament, though in some cases it may be better to carry it well in toward the median line.

The strengthening of the wall by the union of the tissues forming the canal through which the hernia escaped will vary much in its details, for the conditions are very different in the two classes of cases designated by Champaniere as the hernias of strength and the hernias of weakness. The atrophied relaxed wall requires very different treatment from the thick muscular one. The union of the tissues of the weakened abdominal wall should be sought by primary union. This gives, I think, better resisting power to the tension always present on the pliable abdominal wall than the scar tissue formed by granulation or suppuration.

There are many conditions which affect the tissues involved. The age, the sex, or the obesity of the patient, as also the degree of atrophy produced by truss pressure, the size of the hernial opening and the age of the hernia will necessarily modify the method of approximation. The individual skill of the operator in meeting these conditions will not only determine changes in method, but will also influence the ultimate result.

Buried sutures are essential. Permanent sutures as of silk or silver wire have their advocates, but they can not give permanent support to the part and must soon become an irritant, and will weaken the wall by inducing absorption or exciting the formation of cicatricial tissue at the expense of normal structures of better resisting power. If union by first intention fails the silk is likely to become infected and require removal.

Animal sutures appear to fulfill every need of the surgeon. The chromatized gut or kangaroo tendon will give good support during the time required for the solid healing of the parts. The tissues of the inguinal canal should be securely approximated, muscle, fascia and tendon being utilized to make a thick, firm line of union. Healing by first intention is desired. The extensive dissection and laceration of the loose connective tissues necessary in many cases of hernia where the sac is large and is thoroughly removed, make the use of primary drainage occasionally a wise precaution.

We conclude:

1. That the mortality should not deter us from encouraging the operation for the radical cure of hernia.

2. The percentage of permanent cures is sufficient to justify it.

3. The removal of the sac is an essential feature of the operation.

4. The approximation of the tissues in the weakened abdominal wall is no less important.

5. The surgeon can not urge the operation in every instance, but may perform it in the great majority

of cases of rupture where a truss does not satisfactorily control the hernia.

A problem of equal interest to drainage or the radical cure of hernia, is presented in a modern question in surgery, viz: the "treatment of appendicitis." This subject is one in which American surgeons are particularly interested, for its present clinical importance has been demonstrated by their clinical work; notably by Sands and McBurney.

The treatment of appendicitis is still an open question. The care of the individual case offers choice of lines of treatment which make most difficult a decision. The anatomical and clinical investigations of the past few years have demonstrated very clearly that the American idea of the pathology of inflammations in this region is correct. Primary inflammation of the appendix is frequent, and it produces not only an ulceration and destruction of the organ with a circumscribed or diffuse peritonitis, but it also frequently determines a perityphlitis and a typhlitis with engorgement and thickening of the walls of the ileum. I think we may fairly assume that the vast majority of the inflammatory affections of the right inguinal region originate in the appendix. These inflammations result not so much from concretions in the appendix as from irritative catarrhal or obstructive conditions which produce engorgement of its mucous surface and thickening of its wall. The inflammation in the appendix may arise from a small lumen, from a catarrhal congestion of the mucous membrane, from disturbed circulation resulting from a bend or twist, or from the pressure of a distended bowel. Irritative fluids with the presence of the bacterium coli frequently excite inflammation in it, so also does fecal matter or a foreign body. Now if we remember the uncertain anatomy of this organ, its varying length, the wide difference in the size of its communication with the colon, the length of its mesentery, its fixed or its free position in the cavity, we must know there is not only a great difference in the origin of the inflammation, but also in its termination.

The full distended appendix may excite pain and distress accompanied by an inflammation which will suddenly disappear on the escape of its liquid contents. This might occur when a small lumen or a twist was the source of the distension. Catarrhal congestions or thickening of the mucous lining may be evanescent and temporary in character.

A full colon and a distended ileum may press upon the appendix and determine an inflammation which will subside with the emptying of the bowel.

A foreign body in the appendix, or an ulcer may slowly establish a perforation of the organ without giving a previous history of inflammation, and without much pain.

The circumscribed peritonitis excited by it may arrest the action of the ileum and the colon and by agglutination of the parts establish a tumor with doughy, elastic outlines that suggests an intra-peritoneal abscess. This tumor may disappear as the peritonitis subsides and the muscular wall of the bowel again resumes its action. These peritoneal adhesions may insure a cure by limiting an intra-peritoneal abscess and guarding against the diffusion of the infection which would result from the perforation of a free appendix. An ulceration or a gangrene of the appendix together with a perforation of the adjacent colon and the establishment of a vent for the abscess through the intestinal canal may give a favorable termination. The inguinal tumor doughy, elastic or fluctuating, may disappear without operative interference, or produce death by the escape of its contents into the general cavity. The free appendix, though giving but slight evidence of inflammation, may discharge its contents into the abdominal cavity and produce death within a few hours of the first warning of trouble. A severe colic with its attendant symptoms of pain, nausea and local tenderness, or the distinct evidence of a circumscribed peritonitis may attend a case which rapidly recovers not only from the immediate attack, but remains perfectly well.

A temporary and evanescent, or prolonged and severe inflammation may ensue in attacks of appendicitis where the initial symptoms and the history of the disease are much the same. The danger of the attack, difficult as it is to prognosticate, is rendered still more uncertain by the situation of the appendix in the individual case.

If the appendix is behind the head or body of the colon it will very generally, if ulceration and suppuration be established, develop an abscess after peritoneal adhesions have cut it off from the general cavity of the peritoneum. It then kindly awaits the action of the surgeon. Large well circumscribed abscesses may develop about the appendix even where it is long and hangs in the pelvic basin.

Joseph Bryant and I. Turner have contributed some suggestive anatomical facts which help us to a solution of the clinical problem presented in appendicular inflammation.

The important general deduction appears from these investigations that the appendix is held in close relation with the cæcum and colon and the posterior abdominal wall in about 30 per cent. of the cases.

This leaves 70 per cent. of the cases in which it hangs somewhat freely from the colon and is more intimately in contact with the small intestines. It hangs free. The position of the appendix is determined by the character of its mesentery, its length and bulk, as well as by adhesions.

Clinical observation sustains the belief that the inflamed appendix which presents toward the median line or in the pelvic basin is more dangerous to life than when it comes into more direct relation with the colon and iliac basin. The freely moving small intestine does not so quickly become adherent. The adhesions are not so firm. The long, free appendix is perhaps more liable to the slow and painless ulceration processes that sometimes precede the sudden rupture and escape of contents into the peritoneum before adhesions have shut off the general cavity. The abscess when well formed is more likely to rupture because of the pliable wall formed by the small intestines which is its chief enveloping tissue, and on account of the influence which the change of position of the body has on its outline. The impulse of coughing, the movements of respiration, the distended bladder and the inflated or compressed intestine all become active agents in determining the results of the progress of the inflammation of the free appendix.

The appendix, as far as clinical observation determines, inflames more frequently in the 30 per cent. of cases in which it is held in close relation with the colon than it does in the 70 per cent. of cases in

which it is surrounded by the small intestines and presents towards the median line and away from the colon and the iliac basin. The enveloping tissues forming the wall of the abscess which is developed about the appendix when situated behind or outside of the colon is derived chiefly from the colon and the posterior and lateral abdominal wall of the iliac and the lumbar region. Here the danger of delay is not so great as in the free appendix, for the abscess formed is more likely to await the timid action of the physician or the dilatory surgeon.

Recurring attacks of the disease, the frequent sudden deaths which result from such attacks assure us that there is grave danger in waiting either for the recession of the inflammation or the development of the well defined abscess.

There is no symptom nor yet any group of symptoms which will in the early history of appendicitis determine the absolute necessity for operative interference. Severe, suppurative, destructive cases recover without operation. Fatal results assure us that danger is concealed in many of the apparently less grave conditions.

Pus, to the general surgeon, is a strong temptation to cut. It should in nearly every instance be evacuated. Yet clinical experience must have taught many of you that the inflammatory area is more clearly defined and less diffused, the adhesions firmer, and the general condition better suited to operative interference in the cases of appendicitis after the abscess is well circumscribed than when the pus is first formed. The congestion and the irritation of the peritoneum in the beginning of the attack is often great and makes the tissues intolerant of further traumatism.

I can not see the way to a definite rule of action. Prompt action is most important where the free appendix is inflamed. The surgeon rarely has an opportunity to operate on any case prior to the rupture of the appendix or the development of the abscess, with the formation of adhesions which cut off the appendix from the general peritoneal cavity.

These conditions are usually promptly established. The general infection of the abdominal cavity comes, I think, more frequently from the rupture of the appendix before adhesions have formed than it does from the escape of matter from the circumscribed abscess. Yet both conditions are pregnant with danger.

If a definite rule for action must be outlined, then logical deduction and clinical experience will demand an operation in every case of appendicitis, or it will deny operative interference until perforation has occurred or an abscess has formed and is seeking exit by an external opening.

The first alternative is very properly denied the surgeon. Many patients, if a fair statement from present clinical experience is made, will decide against the operation in the early stages of the disease. Yet the safe operation is only made early in the disease or after it is well advanced and the abscess clearly defined.

The intermediate time is one of danger to the patient and anxiety to the surgeon. It covers the time of the beginning peritoneal inflammation. It is difficult or impossible to determine whether this inflammation in its earlier stages is diffuse or local and circumscribed—operative interference at this time is hazardous and uncertain, yet it is often demanded by the necessities of the case. The physician, however, often carries this responsibility and the surgeon only sees the case when all doubt is removed, or sudden death or rapid recovery terminates the case without surgical interference.

Action or non-action in a case of appendicitis where a well defined abscess has not already formed will be determined very largely by individual judgment and the clinical experience of the surgeon, though I believe early operations add to the safety of the individual.

The problem then is still remanded not only to the surgical judgment of the profession, but also to the domain of clinical medicine for its solution and the formulation of a definite rule. Statistics deceptive as they are, must slowly determine the line of safety.

When Sir Joseph Lister demonstrated the surgical value of absolute cleanliness he gave to the world the key to the present status of surgical science. He gave the impetus to the wonderful advances of the past twenty years in the present precision and certitude of operative measures. Surgical cleanliness means the establishment of aseptic conditions. The use of soap and hot water are the essential elements of success, but if remains a practical fact that asepsis can not be uniformly obtained and maintained without the use of antiseptic agents. The most important of these agents are moist and dry heat, though sublimated solutions and carbolized washes add to the security and the facility with which asepsis can be established. The influence of antisepsis was so powerful and far reaching that surgeons forgot that any other condition entered into the determination of the result. The vital resisting power of the individual patient as a factor in the case, became a minor quantity. Nature's laws are, however very persistent and the individual has gradually asserted his rights again and will soon re-establish himself as an important factor in the solution of the problem of safety in surgical procedures.

The perfect antiseptic state or an ideal asepsis is only to be obtained in the laboratory. Nearly every wound is accompanied by bacterial infection. Practically a clean wound is attainable, for a moderate degree of infection is easily met by nature's provision for the general and local protection of the individual.

The fate of wounded tissue, whether the injury be inflicted by accident or purposely, depends upon three factors:

1. The vital power in the individual.
2. The condition of the parts involved.
3. The amount and character of the bacterial infection.

The mysterious individual power has ever been a potent agent of confusion and of strength to the surgeon. It has won many battles for him when ill advised surgery has threatened its destruction. It confounds him with death when every possible avenue for its perverse expression has been guarded. It enters the surgical problem with the nervous anticipation which long precedes the use of the knife, and finds a pronounced expression of its influence in the shock produced by injury by operation—or mental emotion. It does not cease to proclaim its power until months and years of suffering make us wonder whether it pervades with independent life every atom of the worn and tired body. It is snuffed out of the strongest and most vigorous body with a whiff of adversity, and it persists in the weak and worn until

we admit our ignorance and our impotence. Careful search for local disease and the sources of auto-infection has eliminated many of the uncertainties of this first factor.

Biological science has explained the development of local inflammatory action or its absence at the site of the wounded area by the activity of bacterial infection or its suppression and nullification by the local resistance established through the phagocytes of Mecchinkoff. The phagocytic action of the cells in a wounded area supplement the surgeon's efforts for antisepsis, and make possible the grand success which has attended the enforcement of aseptic methods.

The immunity from danger thus assured by nature from a moderate infection should encourage every surgeon to continued efforts to make as perfect as possible all procedures which tend to establish aseptic conditions, for this third factor in the safety of surgical operations is clearly put within his control. The methods of infection through the wound and the details of asepsis are so well defined that we are fairly accountable for any undue infection thus established.

Aseptic conditions have given a security and a certainty to operative measures which has encouraged a marvelous increase in surgical work. Discarded operations have been revived. New operations are abundant. Regions of the body heretofore held sacred have been triumphantly invaded. So great has been the success of the operative surgeon and so easily is it attained, that many poorly equipped with knowledge and deficient in experience have met with such success in special lines of work that they have lost sight of conditions which must ever remain important constituents in the higher success which should attend the surgeon and the pathologist. Many of the special surgeons who have obtained well earned and well deserved recognition and honor have been something less than the good physician and surgeon; not something more. The better ones develop a more profound knowledge of the needs of frail humanity as their experience widens and their work becomes more general.

The grander success and the more lasting renown must attend the surgeon who considers not alone the possible extent of his invasion of the body, and while remembering not only aseptic possibilities, does not ignore the two cardinal principles of surgical practice, viz: the vital power of the individual and the local resistance of the tissue involved. Have we been lured beyond the legitimate fields of surgical endeavor by the grand success achieved in the operative triumphs of the past two decades? Have we lost sight of our personal responsibility in our zeal to widen the province of our usefulness? No! This personal responsibility is greater than ever before, for an increased number of the conditions necessary to success are clearly defined and placed well within his control. There is moreover no textbook of surgery extant which reflects the surgical judgment of the day. The work of yesterday is set aside in the wonder of to-day, and each worthy worker has become a law unto himself. It is vain for societies to pass ordinances and express judgments. The march of progress is so rapid that they are forgotten or stand as a condemnation of the men who favored their expression.

Individual responsibility is great; the man of so-called advanced work, the radical in his specialty, is open to the severest criticism for subjecting every general consideration of human welfare to his special diction. So also is condemnation due to the individual surgeon who lingers with the traditions of his master and hesitates to give to his patients the benefit of recent surgical advances, though he carries with him the profound truths which underlie and must ever control human life. Many modern operative efforts may not stand the test of time nor accord with the rights of humanity, yet they have worked wondrous benefit to man. The power of precedent and of authority offers us no retreat from individual responsibility, for you can find recorded authority on every side of a given question. The halting, uncertain surgeon is as justly criticised as his more bold and reckless neighbor. Our individual responsibility is great, and almost absolute in individual cases. The leaders in the surgical work of the day have no precedent for their work, so rapid are the legitimate changes in the details and purposes of surgical work, and so widely varied is the standpoint from which the individual surgeon views. It is an uneasy time for the conscientious worker.

The three conditions established as factors entering into the infliction of every wound are as varied as the individual, and often assert their importance at most unexpected and disastrous crises. The most expert operator and the most profound surgical philosopher, though every known factor within his knowledge and control favor success, is occasionally forced to acknowledge defeat and admit death, a foe more dire than the disease attacked. Hence it is only serious disease that should command grave surgical procedure.

SOCIETY PROCEEDINGS.

American Surgical Association.

Buffalo, N. Y., May 30 to June 1, 1893.

(*Continued from page 644.*)

The use of plaster of Paris dressing is one of the most important elements in the treatment of compound fractures. To hold the parts at absolute rest there is nothing equal to plaster of Paris. There seems to be something beside the absorption power of the plaster which lessens the tendency to decomposition.

Dr. G. M'Lane Tiffany of Baltimore, did not see how the ferrules could be used with advantage in comminuted fracture. The application of the ferrule in these cases is liable to cause separation of some fragments which might otherwise unite. In the three cases reported the ferrules seemed to be used simply as an adjunct to other methods. There is no method applicable to all cases and often the method can not be decided upon until the fragments are exposed. In cases where there has been much loss of bone the use of the ferrule does not seem applicable. In such cases the steel splint with steel screws had been in his hands the only method of holding together the fragments. In compound comminuted fracture the fragments may be placed in position with the fingers and held in place by the plaster of Paris bandage. It did not seem to him that the case had been made out except that in certain instances the method described is a good adjuvant, but that it is so in many cases, I should be inclined to doubt.

Dr. M. H. Richardson of Boston, said that in most cases of ununited fracture treated by the application of silver

wire, recovery follows satisfactorily. He thought that the same is true from the use of ivory pegs. Occasionally, as Dr. Senn advised, the application of the ferrule is of service and is a rational method. He reported a case of transverse fracture of the humerus operated on several times by silver wire sutures but without securing union. In such cases where it is desirable to keep the bones from slipping transversely, the method of Dr. Senn will answer a useful purpose. In ununited fracture with extensive loss of substance the periosteum and medullary cavity do not come in contact and I do not see how this is provided for by the method described.

Dr. J. Collins Warren of Boston, had also operated on the case referred to by Dr. Richardson, but the lack of union was due more to the condition of nutrition than to failure of mechanical appliances. The patient is five feet, eight inches in height and weighs 300 pounds. At the suggestion of Dr. J. J. Putnam, the patient had recently been put on the use of thyroid juice. During three weeks' treatment the patient had lost ten pounds, but the method had not been continued sufficiently long to determine what the ultimate result will be.

Dr. Jos. Ransohoff of Cincinnati, asked if Dr. Senn intended the use of the method he had described to do away with the use of external appliances?

Dr. N. Senn of Chicago, said that his remarks had been misunderstood. He did not protest against the use of external support nor did he charge this with the production of permanent damage. He had alluded to continuous extension for six or eight weeks as being productive of such results. There is no method of direct fixation and probably never will be, that will render external mechanical support unnecessary. All that he wished to overcome was the tendency to lateral displacement and to bring by such direct means similar anatomical structures into mutual contact and hold them there. The angular deformity and rotation can be overcome by the use of plaster of Paris bandages.

Adjournment of morning session.

Afternoon Session.

Dr. J. Collins Warren of Boston, read a paper entitled

Hypertrophies and Degenerations of Cicatrices and Cicatricial Tissues.

The evolution of cicatricial tissue was first traced. Lymphatics are not usually found and nerves are rarely seen in scars. Scars rarely disappear entirely. They usually remain as a fine white line, or if the scar has stretched, as a band. Scars grow in proportion to the rest of the body. This point is not sufficiently borne in mind when performing operations on children in exposed portions of the body.

The most striking peculiarity of scar tissue is its tendency to contract. During the healing process this acts in a beneficial way. It is also the cause of the most marked deformities. This contraction of cicatricial tissue is not due to any specific contractile quality in the tissue itself but to the absorption of new formed tissue. Scars are not ordinarily painful, but may become the source of pain by adherence to structures which are sensitive.

Among the most common pathological conditions observed in scars is that hypertrophic condition known as keloid. There has of late years been a growing feeling that keloid tumors spring from cicatrices more frequently than has been supposed. True keloid is found on the chest and is an extremely rare form of growth. It seldom disappears. False keloid may develop in almost any part of the body.

Cancer not infrequently forms in cicatrices, usually after the cicatrix has existed several years.

Calcareous degeneration of a cicatrix has been reported. A common form of complications in the life history of scars is suppuration, which may be due to re-infection or to the awakening of spores which have long been dormant. A most common form of relapse is due to tuberculosis.

A description of the cicatrix which forms between the Tiersch grafts and the subjacent tissue was given.

Every effort should be made to limit the development of scar tissue. Animal sutures should be used if they are to be buried. Very superficial sutures should be used freely. The checking of the superabundant growth of granulations has been strongly recommended as the contractility of the cicatrix is largely dependent upon the amount of granulation tissue which becomes organized. For projecting scars compression has been recommended. This will often relieve the redness as well as the elevation. Unna advises friction with sand in the treatment of depressed scars. Pigmentation of scar from gun powder may be relieved by scrubbing with nail brush under ether. In older cases the particles of powder may be removed by the punch devised by S. J. Mixter for this purpose.

The treatment of true keloid is discouraging on account of the persistence with which it returns. If excision is attempted, the incision should extend one or two cm. beyond the limits of the disease and extend to the muscular aponeurosis. Compression is recommended by many writers for the treatment of false keloid. As keloid is a connective tissue structure it is possible that an inoculation with the virus of erysipelas might produce absorption. Whether such a powerful remedy would be justifiable is doubtful. Tiersch grafting may be employed with advantage to broad and flat cicatricial keloids. A case was reported in which this method had been employed, and thus far (several months) there had been no return of the tumor.

Discussion.

Dr. George R. Fowler of Brooklyn, described the pathological anatomy of cicatricial and spontaneous keloid. The fact that keloid more frequently follows wounds in which there has been much suppuration suggests a microbic origin. In regard to epithelioma developing in cicatrices it was noted that it has a tendency to spread upon the surface and rarely passes into the depths of the tissues. In the treatment of this condition there should be early and radical extirpation.

Dr. G. M'Lane Tiffany of Baltimore, said that in the southern States keloid was exceedingly common, but he knew of it only as a cicatricial disease. He had never seen a case of so-called non-cicatricial keloid. In the negro the disease is prone to undergo retrogressive changes after the age of forty or forty-five years. The affection rarely occurs before the age of eight or ten years. In the white race it may be confidently expected that keloid will go away or not much progress after the age of twenty-five years. The case of a girl who at the age of seven years was severely burned on the face, breast and arm was reported. She was seen by the speaker eighteen months after the accident. At this time the scar was bright scarlet and one-half inch in thickness, resembling a heavy plate of cartilage. The advice was to let it alone. Twelve years later there was a white perfectly mobile scar. The speaker was inclined to think that operative measures in young persons, either white or colored, are unwise.

Dr. M. H. Richardson of Boston, remarked that in cases of abdominal incisions it was important to bring the parts together so as to secure union by first intention. In open wounds that heal by granulation there is a great tendency to hernia.

Dr. J. Collins Warren, in closing the discussion said that the point which had impressed him was the absence of contractility in the scar tissue which formerly was believed to

exist. It is absorption that produces the pullings. The scar tissue itself yields before pressure. Therefore the importance of accurate coaptation not only to make the scar small, but to have no scar at all, and have regeneration instead of repair.

Dr. M. H. Richardson of Boston, read a paper entitled

SURGERY OF THE GALL BLADDER.

The paper was based largely upon personal experience. While the field is most brilliant and promising, anatomical and pathological considerations give it distinct limitations. It is seldom possible to cure or even relieve malignant diseases involving the gall bladder, or gall ducts. With a few exceptions, operations are of questionable value in most cases of chronic obstruction to the bile flow from causes other than stone.

A gall bladder may be much enlarged, its functions may be entirely destroyed and it may contain a large number of stones without causing any symptoms. While it is justifiable to relieve this condition of simple dilatation to avoid possible future complications, interference is not essential in the absence of pain and of local and constitutional disturbances.

Impaction of the common duct results in universal jaundice which may be a pronounced and fatal cholæmia. The gall bladder and biliary passages become distended, perforation frequently occurs with escape of bile into the peritoneal cavity and death; or a spontaneous cure follows rupture into the intestine, the stone remaining fixed in the canal. At other times the stone makes its way by ulceration into the intestine and permanent recovery takes place.

Operations on the gall bladder and biliary passages should not be undertaken until every means at our command to make a diagnosis have been exhausted. Unnecessary explorations should be avoided. In some cases the presence of malignant disease or other fatal organic disease can be shown clearly enough to justify a policy of non-interference. The anatomy of the region of the gall bladder was carefully discussed and illustrated by diagrams. The point recommended for exploratory incision by the author is just to the right of the rectus muscle, opposite the tip of the cartilage of the tenth rib. Here the abdominal wall consists chiefly of skin and fascia. An inch and a half opening is sufficient. If subsequent procedure is required the opening may be continued upwards along the border of the rectus muscle and outwards parallel to the border of the ribs.

Operative Surgery of the Gall Bladder.—Gall stones limited to the gall bladder being the most frequent occasion for surgical interference, cholecystotomy is the most common of the surgical procedures. In the normal condition of the gall bladder it is a simple operation. The gall bladder may be sewed into the wound and incised at once, or opening may be deferred a day or two. The so-called ideal operation where the opening in the gall bladder is immediately closed, is the preferable one where it is practicable. When the gall bladder is contracted so that the fundus can not be brought in contact with the abdominal wound, immediate incision with drainage or total extirpation are the alternatives. Unless we extirpate contracted gall bladders, drainage must be resorted to. For drainage the glass or rubber drainage tube with gauze packing for leakage around it answer admirably.

Cholecystotomy—Extirpation is desirable in certain cases. This procedure should not be attempted unless the gall bladder can be easily separated from adjacent structures. Besides lessening danger at the operation, it shortens convalescence. Yet even after extirpation drainage and gauze tamponage is necessary.

Operation upon the Cystic, Hepatic and Common Ducts.—There are few conditions of the hepatic duct which admit of operative manipulation. In health it can not be catheterized. When dilated it may be explored through the gall bladder. Stones impacted in the duct may at times be crushed, at other times incision is required. The cystic duct after apparent obliteration becomes pervious at times as soon as the gall bladder is opened. This must be explained by subsidence of inflammatory stenosis caused by long continued irritation of the stones.

Operations upon the hepatic and upon the common duct are indicated when stones become hopelessly impacted in either. The incisions may be closed with suture at times, but oftener this is impracticable. A rubber or glass drainage tube should then be placed in the duct with siphonage and the whole protected with gauze. In no case of operation upon the biliary passages has death followed remotely or immediately as the result of biliary obstruction, and in no case had the author observed septic infection from this cause.

Cholecystenterostomy.—In chronic organic, non-calculous obstruction we must expect chronic and fatal cholæmia until we can provide artificially for the escape of bile either externally or internally. Anastomosis between the gall bladder and duodenum is preferable when possible. Deviation of the bile flow into the colon seems compatible with health and is often more possible than the duodenal route. The anastomosis may be made by Senn's plates, or Murphy's buttons, or mechanical devices may be omitted altogether. The essential point is to have the opening large enough to secure permanency. The contraction after anastomosis must be practically complete to arrest the natural flow of the bile.

If the gall bladder can not be used for anastomosis, the common duct may be isolated and inserted through a slit into the duodenum.

Operations upon the common duct by way of the duodenum may be practiced under very exceptional circumstances.

Obstructions in the hepatic duct above the point of junction with the cystic admit of no relief, except occasionally by the formation of a fistula, although theoretically the duct above the constriction, if long enough, might be inserted into the gall bladder.

The prognosis after simple exploration is good, although it must be remembered that there is considerable mortality in advanced organic disease.

After cholecystotomies, extirpations and operations upon the ducts, recovery takes place in a very large proportion of the cases. In fourteen cases of gall stone including all methods of gall stone extraction the author had had two deaths; one from an unavoidable sepsis and the other from hemorrhage. In six exploratory operations there were two deaths, both cases of cancer.

In most of the author's cases there had been a marked and long continued jaundice. In none had hemorrhage been an important factor at the operation and in but one had there been secondary hemorrhage. He believed that hemorrhage is a real danger in cholæmia but that its frequency and importance have been exaggerated.

Discussion.

Dr. J. Ewing Mears of Philadelphia, referred to the occurrence in gall stone obstruction of symptoms simulating malarial fever, and reported one case in which this was present. In this case there was impaction of the stone in the common duct. This was pushed forward into the duodenum and the removal of the obstruction was shown by escape of intestinal gas through the gall bladder.

In contracted gall bladder where glass and gauze drainage

is required he would be inclined to apply ligature to the duct and allow the gall bladder to remain in place. In that way we avoid the dangers of attempting to remove the contracted bladder. Attaching of the gall bladder to the intestine is indicated in those cases where cholecystotomy or cholecystectomy or ligation of the duct can not be performed.

Dr. Wm. H. Carmalt of New Haven, said that in 1886 he had performed the operation spoken of as ideal cholecystotomy. The patient had previously been operated upon by a distinguished foreign surgeon for floating kidney. The speaker operated under the impression that the case was one of movable kidney but found the gall bladder distended with bile from impaction of a gall stone in the cystic duct. The stones were removed and the wound in the gall bladder closed and the organ returned to the abdominal cavity. The patient made a perfect recovery.

Dr. T. A. McGraw of Detroit, referred to the great liability of the opening made in anastomoses between the gall bladder and intestine or between intestine and intestine to contract. This he thought was due to separation of the mucous surfaces, with the formation of cicatricial tissue and subsequent contractions. He described a new method which he had devised to overcome this difficulty and exhibited specimens from animals illustrating the results obtained. Instead of making a simple slit in the gall bladder, flaps are made and turned back and the peritoneal surface united. Then these flaps are inserted into the incision in the bowels and the acute edges of the gall bladder incision secured to those of the incision in the intestine. There is thus a projecting ring of mucous membrane through the intestinal opening.

Dr. T. F. Prewitt of St. Louis, reported several cases of affection of the gall bladder and biliary passages in which he had operated. He was surprised that the extravasation of bile was not followed by more serious consequences than had been detailed. Another striking fact is that when the bile escapes around the tube it is so easily prevented from further extension by the gauze. In one case he also had operated for supposed floating kidney and found a distended gall bladder. He then closed the lumbar incision and opened the gall bladder through the anterior abdominal wall. A stone was found impacted in the cystic duct. This could not be readily dislodged and as the condition of the patient did not warrant prolonged opperation, a fistulous opening was made. Subsequently a second operation was done with the view of getting rid of the stone. It could not be crushed and needles had no effect upon it. It was finally removed piecemeal with the curette.

Dr. Stephen H. Weeks of Portland, Me., reported a case of cholecystotomy which he had recently performed. The gall bladder was found contracted to a very small size. It was incised and a rubber drainage tube with gauze packing introduced. The condition of the patient which before operation was critical at once began to improve.

Dr. De Forest Willard of Philadelphia, exhibited a number of gall stones and the gall bladder removed seven weeks ago. The gall bladder was removed on account of suspected malignancy. Since operation the patient has greatly improved having gained thirty or forty pounds in weight. There was one stone lodged in the duct but this was gently forced into the duodenum.

Wednesday Morning Session.

The session was held at the Buffalo General Hospital where a number of interesting cases were exhibited to the Association.

Afternoon Session.

The first paper was entitled

SURGICAL TREATMENT OF CERVICAL, THORACIC AND ABDOMINAL ANEURISM.

By Dr. C. B. Nancrede, Ann Arbor.

Conclusions.—Cervical Aneurism.— 1. All methods should be supplemented by recumbency and diet.

2. Proximal compression, when feasible, should always be tried and, where the arterial coats are seriously diseased, should supersede ligation.

3. Needling should supplement pressure when the case is progressing rapidly. Possibly it is advisable in all cases suitable for compression, and is certainly to be employed where this method fails in cases with highly atheromatous vessels.

4. Proximal ligation, having been rendered much safer of late by the use of aseptic precautions, less absorbent ligatures, and the avoidance of all injury to the arterial walls by employing the stay-knot, is permissible when the arterial walls are relatively sound, until experience decides whether or not needling is clearly indicated.

5. Since recurrence after proximal ligation almost certainly results from non-deposition of white thrombi and their maintenance in contact with the aneurismal wall from lack of proper changes of its lining, needling is clearly indicated.

6. Where the location prevents proximal arrest of the blood-current, needling is the best operation; possibly distal compression—rarely feasible—might aid in the deposition of thrombi.

7. For the reasons already given, although occasionally successful, the indications for the permanent introduction of such foreign bodies as wire, horse-hair, etc., into aneurismal sacs are so much better met by needling that such procedures had better not be adopted.

8. The modern revival of the older method of extirpation of aneurisms should not be attempted for spontaneous cervical aneurisms.

Thoracic Aneurism.—1. All methods should be aided by the employment of rest in bed and proper diet.

2. The permanent introduction of foreign substances should not be employed.

3. Needling should be tried, aided by distal compression when feasible during the use of the needles; if this fails distal ligation should be resorted to.

4. Distal interruption of the blood current by simultaneous ligation of the carotid and subclavian arteries may be tried.

5. Needling is indicated when complete or partial failure follows distal ligation.

Abdominal Aneurism.—1. All methods should include recumbency and diet.

2. Needling, when this can be done without injury to the hollow viscera, is the most promising plan.

3. Proximal or distal compression may be tried with or without needling, but to be effectual must be done under anæsthetics.

4. The permanent introduction of foreign bodies into the sac is inadvisable. (See 7, Cervical Aneurism).

Discussion.

Dr. W. W. Keen of Philadelphia, agreed as to the importance of rest in the recumbent position and restricted diet. He had not as yet employed needling in any case. The method is still on trial. The introduction of foreign substances into the sac does not seem to be altogether logical nor have the results been satisfactory.

Dr. P. S. Conner of Cincinnati, said that he was disposed to look upon operative procedures in aneurism with more favor than he did a few years ago, for the later methods have lessened the risks, and by ligature of the artery you

secure for a time such quietude as can not be secured in any other way.

Dr. T. S. Prewitt of St. Louis, fully agreed with the previous speaker as to the importance of absolute rest and restricted diet.

Dr. Jos. Ransohoff of Cincinnati, in one case of aneurism at the root of the neck had transfixed the sac by two needles, which were allowed to remain ten or twelve hours. This was followed by considerable hardening in the sac. In this case rest could not be maintained. Two weeks after the needle operation was done he left the hospital, and some time later died from pressure of the aneurism upon the trachea.

SURGERY OF THE RECTUM.

By Dr. A. G. Gerster of New York.

The paper was based in part upon the cases treated at Mount Sinai Hospital, New York, during the four years ending January 1, 1893. During this period 557 patients with rectal disease were admitted. 280 of these were classed under the head of hemorrhoids. Next in frequency were fistulæ.

Hemorrhoids.—In recently developed and moderate cases depletion of the portal circulation by salines, etc., is often sufficient. In the way of operation, decided preference was given to the clamp and cautery, which was always chosen in the absence of special indication in favor of any other method. After thorough stretching of the sphincter and proper preparation of the gut by adequate laxation, this process has given invariably satisfactory results. Whitehead's or Lange's operation was reserved for the more aggravated cases, characterized by prolapse of the anal or rectal mucous membrane. The results of this operation, if the essential points of the technique are faithfully carried out, are more brilliant and rapid than those of any other known method.

Fistula in Ano and Ischio-rectal Abscess.—118 cases of fistula had been operated upon. The average time needed for cure was eighteen days, and varied from five to sixty-five days. Shortening of the time required for healing was accomplished by a careful excision of the pyogenic membrane of the fistula and immediate catgut suture of the wound in tiers.

Among the forty-nine cases of ischio-rectal abscess there were some dreadful forms of destructive phlegmon of the ischio-rectal connective tissue. Over one-third occurred in diabetic subjects. The treatment consisted in converting the irregular burrows into a simple and shallow, often very extensive wound. This was followed by immediate improvement, and a marked diminution in the amount of sugar in the urine.

Ulcers of the Rectum and Fissure in Ano.—The cases of ulcer were treated by excision and suture with satisfactory results.

Cicatricial Strictures of the Rectum.—Extensive and mostly intractable ulcerative proctitis was observed six times, all in women. In four cases linear proctotomy and gradual dilatation gave moderate alleviation. In two cases inguinal colotomy was done. In one of these cases excision of rectum was later resorted to with a fatal termination due to collapse from acute anæmia.

Prolapse of the Anus.—Eleven cases were treated, mostly children of tender age. The linear application of the actual cautery was generally followed by a cure.

Rectal Polypus was treated in seven cases, mostly children, by ligature and ablation. An eighth case, one of multiple adenoma of the rectum, was also treated. The masses were burnt off or tied off by ligature. Four weeks later coccyx and portion of sacrum removed. Rectum was laid open and a number of adenomata high up were removed. The wound was left open and at subsequent periods other tumors were removed as they formed.

Rectal Carcinoma.—Seventeen cases of rectal carcinoma were observed. Five cases declined operation and in three no operative treatment was considered advisable. In the remaining nine cases inguinal colotomy was done five times with one death. Kraske's excision of the rectum was performed three times with one death, and once the old fashioned perineal extirpation was successfully resorted to. Cicatricial or neoplastic stenosis of the rectum was always considered an ample indication for the performance of colotomy. Colotomy was done as follows: After thorough purgation a longitudinal incision was made two inches to the inward of the left anterior superior spine, beginning two inches above Poupart's ligament. After division of the peritoneum it was attached to the skin by a few silk sutures. The colon was sought for and withdrawn sufficiently to bring the mesentery of the middle of the coil to the surface, then a long shawl pin is passed through skin, peritoneum on one side, then through the mesentery behind the gut, and finally through the peritoneum and skin on the other side. A circular continuous suture is run around the incision. Forty-eight hours later the gut is opened by a transverse incision reaching nearly down to the mesentery.

Discussion.

Dr. L. S. Pilcher, Brooklyn, N. Y., said that in dealing with hemorrhoids he had usually employed ligation and removal, but in the more severe cases had used excision by the Whitehead-Lange method. The results had been so satisfactory that he had not employed the clamp and cautery. Among the disadvantages of the method of excision are the length of time required and the tendency to free bleeding.

In fistula good results had been obtained in a number of cases by dissecting out the entire tract and applying sutures. This is not applicable to all cases.

The speaker had had ten cases of carcinoma of the rectum. In six cases attempts at relief by operation were made. Two of these cases resulted fatally a short time after operation. In the others relief was afforded for a certain length of time.

Dr. H. H. Mudd, St. Louis, said that some time ago he had given up the use of the ligature on account of the pain caused by it, and had substituted the use of the clamp and cautery for a period of two years. He had two severe hemorrhages while using this method, and did not consider it as safe as the ligature. He now uses the ligature in a modified way. He cuts through the portion of tumor on the skin surface and then applies the ligature to the upper portion of the mass.

The cases of cancer of the rectum that he had seen had usually been at a late period. He had done two extirpations by the perineal method with success. He had attempted removal after excision of the coccyx and sacrum without success. In one case he had excised the upper portion of the rectum through the abdomen and made an end to end anastomosis with success.

Dr. L. M'Lane Tiffany of Baltimore, said that in cases of ulceration in cicatricial stenosis he had seen improvement follow colotomy, although the cicatricial contraction in some cases almost completely closed the sutures.

Dr. T. S. Prewitt of St. Louis, held that where inguinal colotomy is done in cases in which there is no hope of restoring the natural passage, it is better to divide the bowel entirely and thus prevent the passage of fecal matter into the distal portion of the intestine. He objected to the closure and dropping of the distal end, for there may be collection of secretions in the bowel which it is desirable to wash out, and this can be done conveniently if the opening is allowed to remain.

(*To be continued.*)

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SATURDAY, JUNE 17, 1893.

THE MILWAUKEE MEETING.

The annual gathering of delegates and members of the American Medical Association was in most respects a success.

As a preliminary, the American Academy of Medicine was largely attended, and the papers valuable, and all looking to the encouragement of advanced preliminary education for the aspirant to the medical course. The usual dinner for the promotion of fellowship among the members was partaken of with gusto.

Immediately after the Academy meeting, the American Medical Editors' Association held its sessions, which were much the largest in the history of this important organization. The president, DR. J. C. CULBERTSON, delivered the following address:

Members of the American Medical Editors' Association:—We again greet each other in our annual convocation. For weeks and even months our thoughts have ever and anon pictured to us the joys and pleasures of this occasion, so that we are prepared and in a suitable frame of mind to fill to the brim and quaff to the bottom the cup of good fellowship. In our coming together we will also, as largely as possible, profit by a discussion of matters of special interest to our guild.

In our relations with the medical profession we are fully justified in making a claim for recognition as post-graduate educators.

In order to provide graduates in medicine with the best possible conveniences for continuing their courses of study and investigation, that they may attain the greatest possible proficiency in our science and art, it has been found necessary to establish post-graduate schools. These institutions are excellent, and afford admirable opportunities to those who can afford the time and money to attend them, but in the very nature of things they will be patronized by a select few; while for the great multitude of medical practitioners who can not for one reason or another attend these special courses, there is provided a common school education in a post-graduate university system, that is unequaled in its advantages; possessing as it does abundant facilities for imparting instruction by the wisest and most eminent professors, teachers and clinicians in every department of medicine and its collateral sciences.

This best and cheapest of university systems is found in a combination of medical journals. The man who graduates in medicine and does not continue his studies, quickly becomes a musty back number and loses his identity as a progressive, integral part of the medical profession.

The always first in appearance in this combine is the local journal. This publication is and should be a little closer in the affections of every doctor than any other, and should have his practical good will and generous support. This support should extend to contributions to its pages, and which may be very brief; but it should be the bounden duty of every one to at least once a year make his offering in this channel. There should never be a debit side in the subscription list of the local journal, for there is never a time when the local journalist is not doing more for his profession than it is doing for him.

Next in importance in the combine is one or more of the large weeklies. These valuable publications contain an epitome of the daily progress made in our art the world over. Hence their claim to a second place in this university extension system. I need say nothing in commendation of them, for their value is recognized and they speak for themselves. After these two chief pillars may be added the elaborate scientific monthlies, which may be designated as the magazines of our literature. Every number of these periodicals is filled with evidences of culture and exhaustive study. These may be added to the combine according to the inclinations of the practitioner.

From this you will gather that our great journalistic common university extension system is adapted to and meets the every day requirements of every member of the medical profession.

A subject that is always of paramount interest to the members of this Association, is the one pertaining to a discussion of methods that will improve the quality of our journals, and at the same time promote their prosperity.

To the uninitiated it always seems as if the second proposition must be the natural sequence of the first. In other words: the more nearly perfection is attained in the editorial make up, will there be a corresponding appreciation of its contents and consequent financial and literary support on the part of the medical profession.

It is a matter of sincere regret that such is not always the case.

The first thing noticeable in taking up one of our publications of the successful sort, is to observe that it is alive, very much alive, and has a life current which throbs and thrills through its every page from title to fourth cover. Moreover, that its conductor is possessed of a peculiar enthusiasm that is characteristic of his individuality.

Wherever there is enthusiastic life there will be found a ceaseless motion. There can be no such conception as that of a motionless journalism, nor of a journalism devoid of individuality.

Pronounced markings are found in the shaping of the product of each one of a corps of writers. This is distinguishable in the abstracts and translations as well as in the tone of the editorial voice. Even the mechanical make up accords with the contents in its individuality, so that a glance from a distance is sufficient to enable us to recognize by name any one of our hundred publications.

A semi-blind man would never pick up the *American Journal of Medical Sciences* with a belief that it was a copy of *Daniels' Texas Medical Journal*, or the *Medical Mirror* thinking it a Chicago *Medical Recorder*, while there is not a man present who would not if blindfolded and in an unknown dark room, be able to select and distinguish from among the journals of the whole world that king of medical publications, the *British Medical Journal*.

A very coarse analysis of the contents of our publications shows characteristics which are peculiar to each in the spaces usually allotted to original contributions, lectures, correspondence, society proceedings, abstracts, translations, melange, news, editorial and book reviews. In every one of these several departments, I am ready to believe that every member of this Association is doing the very best he can for the journal he edits, and is only prevented from doing very much better because of his environments and financial limitations, and that in no instance will any one presume to say that his journal is the best that he can make it, providing he were differently circumstanced.

In scanning the departments of our journals, your attention is directed to that of bibliography, and I would suggest that book reviews should be limited to the briefest possible acknowledgment of the receipt of a volume. Medical book making is a manufacturing and commercial business, and as such should continuously patronize the advertising pages of our journals. Our British medical journalists understand this, and conduct their publications in a model manner in this regard. I have no hesitation in saying that the long

laudatory book reviews should cease to appear. They strangled the London *Medico-Chirurgical Review*, and badly choked the old *Quarterly American Journal of Medical Sciences*. Eliminate them as soon as possible and devote the space they now have to a better purpose. A fair proportion of the pages of every medical journal should be used for the advertisements of dealers in all kinds of physicians' supplies, educational institutions, hospitals, sanitariums and whatever is of such a nature as to particularly appeal to physicians for patronage.

Advertisers are next to subscribers the most valuable adjuncts a medical journal can have. They are the journal's most liberal financial supporters, and should have our most friendly consideration.

A medical journal may be ever so ethical and high toned, edited by a Holmes or a Mitchell, be printed on 100-pound supersized, calendered paper, with new old style type and gilt edged, but if issued without advertisements it will be defective, incomplete, crippled, and recognized as too good for this world. With a full appreciation of these relations, I am free to suggest that medical journals should strictly confine all advertisements to the regular advertising pages. So-called reading notices should be absolutely eliminated from the reading pages of every medical journal. Articles prepared for and in the interest of an advertiser are usually a fraud, and should be expunged from the reading pages. The members of this Association are quite familiar with the appeals made for the insertion of reading notices, and the republication of articles containing references to particular remedies.

Every time a journalist accedes to one of these requests he feels that he has done wrong, that he has deliberately lowered the value of his journal as a professional and scientific publication. He has abused the rights of his subscribers and damaged his own self respect. Our friends the advertisers certainly do not appreciate this fact, or they would not so persistently pursue the course they do in this matter.

An advertiser never intentionally misrepresents in any way the nature and character of his goods in his regular and legitimate advertisement placed in its proper location in the advertising pages. This you and your readers can rely upon all the time. But when it comes to the reading notice and laudatory article, the advertiser loses his head, and wants the grossest exaggerations and misrepresentations published, and all because he feels that the editor, and not himself, is responsible for the matter that appears in the reading page, while for his legitimate advertisement in its own location he holds and assumes responsibility.

We want to cultivate intimate relations with reputable advertisers, and should endeavor to show them the actual harm they are so ready to unintentionally inflict upon our publications, and explain that there is such a thing as ethics in medical journalism. One more argument should be presented to them, and that is the cordiality of feeling towards an advertiser is more than twenty-five per cent. greater when his dealings are conducted directly than when through a general agent. Never neglect an opportunity to impress this idea upon the advertiser, showing the advisability of close coöperation.

Finally, your attention is directed to a class of so-called medical journals which are recognized as trade publications, and are issued by commercial and manufacturing dealers in physicians' supplies.

Such journals materially damage our current medical literature by crowding into it a mass of ingeniously written matter, nearly every page of which is cut bias and made to do duty in the garb of pseudo scientific notes and articles, the chief purpose of which is the laudation of the peculiar preparations made and sold by the firm that publishes the so-called medical journal.

It is well known to every member of this Association that every article, be it ever so well written, that in any way qualifies, or is inimical to the preparations sold by such houses will be allowed no space in such publications.

Such so-called medical journals do not deceive Weir Mitchell, William Pepper, Nicholas Senn or William Osler, but they do deceive hundreds and thousands of medical practitioners, who are not familiar with the wiles of those who scheme to deceive the very elect.

This class of publications are practically trade circulars and price lists, issued in journal form in order to obtain a dishonest advantage over their more honorable competitors in the use of the United States mail. They sing the siren song of enchantment that beguiles the unwary practitioner into the use of so-called specific goods made and sold exclusively by a specific house.

These publications are the literary quacks and charlatans of our profession. As journalists we should ignore them absolutely.

Dr. Gould, editor of the *Philadelphia Medical News*, read a paper on "The Spelling of Some Medical Words."

Dr. Crothers, editor of the *Journal of Inebriety*, also read a paper on "The Interests of the Association."

The banquet which followed was a feature of the occasion not to be forgotten. Mr. Ernest Hart, editor of the *British Medical Journal*, was the special guest of the occasion and made the following remarks on

JOURNALISM AS A CAREER.

During the last thirty years a great change has come over the world of literature, science and politics. In that change, which journalists have largely helped to bring about, their function, their powers and their duties have been largely transformed and inevitably magnified. The mission of the medical journalist is a great one; it is no longer an accidental function of an otherwise busy man's life. Even the ablest men who have taken that view of journalism have failed to make much mark. I refer to men of such capacity and standing as Jenner, Quain, Spencer Wells, Barnes and Jonathan Hutchinson, all journalists in their day. It offers a career which may fulfill high ambitions, and subserve their large usefulness.

I speak of it as a mission, for no man can reach the ideal of medical journalism who only writes to live; he must live to write.

THE IDEAL QUALITIES OF THE JOURNALIST.

The ideal journalist needs to cultivate many qualities which it is not always easy to combine. He should have rapidity of initiative and promptness of decision, for slow deliberation is the grave of opportunity. He needs quick and catholic sympathy, for this is a great source of power, but a corresponding capacity for just indignation is its necessary correlative and qualification. Magnanimity is a necessary editorial quality, for often the best way to remedy injuries is to forget them, and an editor must know what to pass over as well as to what to note, and must be able and willing, often graciously and tenderly, to ignore what others know. He must be accessible to all, and while appreciating the personal acquaintance and justifying the confidence of the leaders among whom he lives and ranks, he needs to be in daily touch and constant sympathy with the professional masses whose requirements and rights it is his special function to voice and to champion.

GUIDING PRINCIPLE.

To be really useful and to be really powerful, two things which are almost synonymous, the editor of a medical paper must in his public capacity, even more than other men in their special spheres, always govern his course and be prepared to justify it by referring each individual case to a recognized basis and a logically defensible principle. He is a leader militant; he must be a standard bearer and must have always a motto inscribed upon his flag. I long since chose mine. It is one to which many thousands of our profession in Great Britain have rallied, and I do not see any prospect of needing to change it for many years to come; my guiding principle has been and is "the government of the profession by the profession for the profession." You will recognize in this formula the altered words of one of your greatest statesmen. Of the medical press even more than of the general press may be used the words of one of the ablest of modern editors; that it should be at once the eye, the ear and the voice of its readers, and especially of the lowly among them. It should be the visible speech, the phonograph of all ranks. It carries a chieftaincy which arises out of its being the servant of all. Among its great powers must be counted that not only has it the casting vote in many decisions, but it also has both initiative and powers of closure. It can declare urgency or shut down discussions. It is a parliament always open, and of which the editor is not only chief orator but he is also speaker and chairman of committee. With its privileges and responsibilities come many pains. Journalism needs many enemies and entails much sacrifice. An editor needs and

must have many enemies; he can not do without them. Woe be unto the journalist of whom all men say good things. "A man," says Oliver Wendell Holmes, "whose opinions are never attacked is beneath contempt, for every real thought on every real subject knocks the wind out of somebody."

Compece mentem, durum sed laevins fit patientia, quicquid corrigere est nefas; which, freely translated, may be summed up in a few words: Bide your time, keep a cool head and quiet mind. Time cures all things, and patience softens hardships. Editorial work, like all other good work, is largely one of self-sacrifice. It is the grave of literary reputations and the despair of literary ambitions. In writing reading articles, as Washington Irving found in voluminous correspondence, your mind is torn from you in strips and ribbons, which are scattered to the wind, and your thoughts leak out in driblets which barely moisten the earth. Where is there a literary memorial of any, even the greatest among editors? Perhaps Addison might have survived by his Spectator alone, but he was an essayist rather than a journalist. St. Beuve has left a monument of literary criticism, but not it is to be feared, "more lasting than brass," but Delane Wise, great editor that he was, the brilliant Fonblanque, Hutton, philosopher and moralist, have but written by fear their names in sand, and that is the common lot of all journalists as such. In their works they shall live, but their names, hardly known even in their own day, shall speedily be forgotten.

That is at once their glory and the penalty in which they must rejoice, and their influence far-spreading and enduring, their unseen power in the shaping of events, is the reward of their self-effacement. An editor must quickly form his opinions and firmly express them, but he does well not to enter into controversy. For controversy, it has been well said by Dr. Oliver Wendell Holmes, equalizes fools and wise men in the same way, and the fools know it. It is a prudent thing to refuse to be drawn into controversy, especially in the pages of one's own journal. Don't lose time in alteration, for in much alteration truth is lost. Let every man have his say; let him contradict you; let him attack, provided he does so in the limits of courtesy and of good temper. Learn from him, and let others learn. Do not answer him or put tags to his letter unless some rectification of facts is necessary. Among the earliest lessons for an editor to learn, and it is one also which must last him during all his life, is to be slow to this evil, and to be hard of hearing for personal accusation. The accused so often turns out to be whiter than the accuser.

REVIEWS AND REVIEWERS.

If now we may, in passing, linger for a moment in the field of technical details to speak of some special editorial difficulties, I will select as not the least trying that of the fair and kindly conduct of the department of review. It is an obvious truism, often clothed in the millinery of epigram, that the author who sends a book for the candid opinion of the reviewer, as he says and believes, almost invariably expects it to be praised. Anything cooler than a warm shower of eulogy chills him; a lukewarm mixture of praise and blame makes him shiver; a rain of cold criticism is apt to make his teeth chatter—with rage; and for this there is a great excuse. Of a book, even more than a child, the author is apt to say to himself, "it is a poor thing, but mine own." The condemnation outrages not only a man's self-esteem, but his parental affection. It is well, then, to advise the younger reviewers, who are apt to be arrogant and satirical on small provocation, to temper justice with kindness; to seek out merits as well as defects; to endeavor to portray the character of a book when passing judgment, and to forego the savage joy of cutting up the product of the feebly well-intentioned. Rather pass their work over in silence. But there is a tribe of books, wares of the self-advertiser, the vulgar notoriety hunter, flags of the unscrupulous privateer who flies without a warrant the colors of the specialist—sign boards of the masquerading quack. Of these it must still be said, when the culprit escapes the judge is condemned. But it is of literary quackery in high places, of the empty platitudes, of the ill-written inanities, of orations, discourses and lectures by men who, having attained professional distinction, fail to set aside time for continuous intellectual culture. It is of these that it becomes the medical journalist to harden his heart as the unforgiving judge. He alone can venture fearlessly to do so, and he ought to do so, for they not only disappoint, but they mislead. They lower the literary standard of medicine, which is already inadequate.

LITERARY STYLE.

That brings us to the subject of literary style in medical journalism, which may be dismissed, however, in very few words. An editor is often asked by young writers "what style would you recommend me to adopt?" And what advice can you give me for writing, in your journal? I don't know what your view may be, but it has always seemed to me desirable to recommend the avoidance of style and to advise those who seek counsel on style consciously to avoid it, and to try chiefly to say what they have to say as clearly as possible and to seek mainly the accurate expression of precisely the shade of meaning which it is intended to depict. It is a golden rule to think out clearly and precisely what there is to say and to say it shortly and without ambiguity. People who are anxious about style are generally those who have nothing to say and they are precisely those who take longest in saying it. It is generally difficult to say nothing without saying it at great length, and medical stylists are the bores of the profession and the terror of the medical journalist. On the other hand nothing will compensate for the want of clear and grammatical expression, nor is there any department of journalism in which pompous rhetoric and the straining after jocosity is less graceful than medical journalism.

ORGANIZATION OF THE MEDICAL JOURNAL.

I have nothing to tell you which you probably do not know better and from more modern sources, and from your own experience on the subject; but I can in a few words lay bare to you a few secrets of our own press room and leave you to value or cast them away. Many of us here were educated in the old school of journalism which relied chiefly on the permanent staff of leading article writers and reviewers, to whom were allotted from week to week everything in their respective departments. When a young man, and while still residing in the hospital, I wrote the editorial notes of the week for a leading journal. Three columns a week was the allotted tale. To another member of the staff was intrusted three columns of answers to correspondents, and so on from cover to cover. In some high places I believe that system still survives; it seems to me effete; at any rate I have abolished it for the last twenty years. The only system which seems to me adequate to the real needs of professional readers is that in which every unsigned editorial paragraph is written by a specially selected expert. That is the principle on which I have modeled the journal I have the honor to conduct. Every letter received, every paragraph, every cutting, editorially dwelt upon is referred to an expert having a special knowledge and being a recognized authority in the matter. The recent examination of our books show that to fulfill the requirements of the comparatively few pages of our journal devoted to unsigned editorial matter we need and employ the services of an active staff of nearly 250 editorial writers. Of these, upwards of forty contribute on an average to our pages every week; often only a few lines each, for our object is authoritative accuracy, our literary aim is brevity and fullness and our difficulty is condensation. It is a laborious and difficult method involving heavy daily correspondence and constant vigilance to gnard against personal eccentricity or prejudice of that bugbear of journalism—unjustifiable censure. But that method may, I venture to think, be recommended as one which gives authoritative accuracy, realty and trustworthiness to journalism. A medical journal in order to rise to the height of extended usefulness, needs to be written from end to end by experts, and so far as the journal of the British Medical Association may be considered to have been a success, that success has, I believe, largely been due to the fact that no pains or necessary outlay has been spared to provide that every line in every department shall be written by persons who are themselves trustworthy experts; that it shall be free from padding and in its smallest details true; worthy of confidence in statement of fact, and free from the rehash of second rate opinions gathered from second rate sources. I may venture also to suggest that it is a great advantage to a journal and to the profession which it represents that it should be connected with living organizations local or general. Energy becomes in itself a merit where otherwise it would be a fault where there is an organization which underlies and which is capable of overruling it; where the journal is not only a voice, vox et preterea nihil—but also an undisguised personality and associated with influential standing committees. A journal becomes thus an active, permanent and ever living tower in the state; the combination of a journal with an association, the highest devel-

opment of this form of profession and social influence may be, I believe, fairly demanded and expected. And our experience has shown that it is not always expected in vain.

MEDICAL ETIQUETTE.

A class of questions which give an editor frequent occupation for thought and some time some passing troubles are those known as questions of medical etiquette. The value, the uses and meaning of medical etiquette are variously estimated. There are those to whom it is fetish, and those to whom it is tabu. To some it is a name of terror, to others a term of derision; some assume to hold themselves above its reach, others are obviously below it and some outside it. The philosophers hold it to be unnecessary because superfluous, but it is perhaps true, however paradoxical, to say that in our complex modernity of civilization it is chiefly the superfluous that is felt to be essential. At any rate it is chiefly our superfluities which become indispensable. The philosophers are apt to protest that medical ethics have no separate existence apart from or antagonistic to the rules of general ethics. Far from being a reproach or a ground of destruction or a reason for abolition that is one of its highest claims to respect and a fair measure of its usefulness. Medical ethics are particular cases of general ethics. They constitute the bulwarks and the outer fortifications of the central fortress. "Do unto others as you would have them do unto you" is the golden rule which is enclosed within the general medical ethics. But society has found it necessary to formulate a vast number of accepted laws of conduct which are none the less necessary for daily use because they may all be found inscribed in the ten commandments; the gospel rules of conduct for life and the whole code of modern legislature for the regulation of social relations are not superfluous because they may be traced to the simple Mosaic tablets and to the sermon on the Mount. In the complex relations of medical life questions daily arise involving principles upon which every man might after due thought decide for himself. The application of principle which every man might work out if his intellect were always keen, his judgment well balanced, his interests calmly self judged and easily put aside when they conflict with the general interest, so perfect a being might be content to be a law to himself, but for perfection it has been found in every walk in life that it is well to have in hand, stored in the memory or laid down for reference, decisions and rules already settled by the wisdom, the experience and the judgment of the wisest and best of our predecessors and our contemporaries. That is the code of medical ethics and we wise men will not despise it. Let me say in one brief sentence that many of us in Great Britain think it one of the highest and greatest claims to sympathy and respect of the American Medical Association as a representative body that it has framed and promulgated such a code, and that it has made great sacrifices to uphold it. Securus judicat orbis turatum. The voice of the profession has been and is in the end the surest judge of right and on all such questions of general conduct and universal rights it is the rank and file of the profession with whom lies the duty, the power and the privilege of decision; even in the face of opposition from those whom we delight to honor as the leaders of the profession. That brings me to my final topic:

LEADERS OF THE PROFESSION.

No man attains that position now-a-days without having earned it. No one should reflectively and consciously speak slightly of the leaders, least of all could I. I have enjoyed the friendship and frequent opportunities of communication with men such as Austen Flint, Van Buren, Gross, Fordyce Barker, Marion Sims, Agnew, to speak only of a few of those of your leaders whose personality was best known to us, but who have, alas, gone over to the majority. No one could have known them without recognizing the signs of nobility of mind and strength of character. So with us, it has been a liberal education to have spent a life in frequent communication at successive periods, and on many great and small occasions with men such as the sagacious Brodie, Sir Henry Holland, a philosopher, traveler, and a pioneer by intellect; Owen, the Cuvier of Great Britain; Lawrence the cultured ethnologist and scholar; Watson, the Nestor of the last generation of medicine, and still a classic; Ferguson, lion hearted and woman handed; Syme, sturdily original and uncompromising; Simpson, a path-maker in obstetric medicine and surgery; Christison, the type of prudence and candid research; Stokes, brimful of sagacity and humor; Corrigan and Porter, the masters of the great Dublin school; and our own loving leaders, Jenner, Lister, Paget, Andrew Clark, Quain, Spencer Wells, Henry Thompson, Hutchinson, all men who have risen by their own individual merits, and are known by their works. They have fruit as well as leaves. It is not therefore in a cynical mood or snarling temper that I say, except in clinical scientific research, a great and never to be forgotten exception, Put not your trust in leaders. Lucus a non lucendo.

They are called leaders, but so far as modern history shows, and so far as my experience of thirty-five years teaches, they are mostly led. In the great social movement of medicine, in its human progress, in the development of the new and wider function of medicine, its relation to public life, its organization for the prevention of diseases, for the care of the sick poor by the State, for the organization of out relief of hospitals in such manner as to prevent abuse; in most of the great movements of our day we have for the most part found them lagging, cold or indifferent. Feeling little enthusiasm for such movements in Great Britain as those which resulted in the appointment of the sanitary commissions, in that organization of a public health system which laid the foundation of the new science and practice of diseases. It was Rumsey, Farr, and W. H. Michael who led the way and whom I found the most active promotors of a system which then furnished the model for the civilized world. They were general practitioners without hospital appointment. The general medical council of education and registration was created at the British Medical Association led by Hastings, its founder, Bottomly of Croydom, Waters of Chester, pronounced practitioners. That council which has rendered such vast service for the cause of education was created and has been remodeled in the teeth of active opposition and subsequent indifference of the leaders of medicine ordinarily so-called, who have, however, kept in the leading place on it in virtue of their official positions. So was it with the reformed of the Workham Hospital and infirmaries which are with the hospitals of the State, that was in its inception the work of a medical journal, *The Lancet*, with which I was then editorially associated. It was carried out by Rogers, Carr and Anstic and myself with the aid of a vast body of lay support which we conciliated. So it has been with the removal of the grievances of the army and navy medical officers until lately the whole of that reform has boen left in the hands of the parliamentary committee of the British Medical Association. The battle has been successfully fought by that representative body of general practitioners and by them alone, until last year we, the royal college, united to secure the adoption of the recommendations of a war office committee which, however, they had up to that date done little or nothing to obtain. I repeat then, rest not your hopes of any purely scientific progress on leaders, for the maintenance of growth in your organizations and of your relations to the State and the people. When you have made up your minds by preliminary discussion and in general session as to what is needful, right and wise, and when your cause is well advanced and winning all along the line the leaders of the profession generally follow. Do not mistake me; it is in the order of things. The leaders are always apt to resemble the conservative old world squire described by Washington Irving, who went religiously to church and sat in the front pew and joined boldly in the responses, because it seemed to be to him an excellent example to the lower order, to show that though he was great and wealthy he was not above being religious. The leading men are apt to join reluctantly in any new movement. The rails must be made first, and the roadway made secure, and then they are commonly willing to board the train and come along in the first car with the flags flying and the music sounding, to receive the sympathy and the applause of the admiring crowd. They are not surprising. Difficilis gloriol custodia; they have for the most part a great practice to attend to which keeps them busy, and a great reputation to maintain, and to make a mistake might be a terrible thing. They are always thinking ex-necessitate of where they stand. Their tendency is to stand in the old ways, with which they have good reason to be satisfied. It is for us to take larger thoughts of where we are going. We journalists need not be so much afraid of making a mistake from time to time. As your ambassador said not long since at the London Mansion House, to the great delight of his hearers: "The man who never made a mistake never made anything."

We can all try to make as few as possible, but it has been truly said that genius consists not in never making a mis-

take, but in never making the same mistake twice over. We journalists need not be so much afraid of unpopularity. It is very often the case, and I suppose all of us have found out in the course of our career it is not unfrequently the forerunner of success.

You can not if you would avoid hatred, but you can take care that no man justly hates you. In the fulfillment of our public duties it is necessary to base opinions and policies upon a logical principle, and hold personal interests and private prepossessions as of little account. We have all a natural love for friends and friendship, but private friendships which will not bear the strain of public differences must give way. Time will often happily repair ruptures which have given much pain, and these are among the greatest pains and griefs of responsible journalism.

> They are slaves who fear to speak,
> For the fallen and the weak.
> They are slaves who will not choose
> Hatred, scoffing and abuse,
>
> Rather than in silence shrink
> From the truth they needs must think;
> They are slaves who dare not be
> In the right with two or three.

The Association was also honored with the presence of GOVERNOR PECK, who, in response to a call, paid a most beautiful tribute to the character and esteem of the family physician. Other gentlemen eloquently occupied every moment of what seemed all too short a time, until the nearing of the midnight hour, the dispersion and satisfaction which followed the feast of reason and flow of soul.

The sessions of the American Medical Association were opened by addresses of welcome on the part of DR. WINGATE, chairman of the committee of arrangements, GOVERNOR PECK and MAYOR SOMERS, after which DR. HUNTER MCGUIRE, of Richmond, Va., delivered the annual address, published in our last issue.

LEGAL EFFECT OF ACCEPTING AN AMOUNT LESS THAN BILL RENDERED.

It is a general principle of the law that where a demand is liquidated or fixed, and the liability of the debtor is not in good faith disputed, the acceptance of a less sum than is the creditor's due will not, of itself, discharge the debt, even if a receipt in full is given. In such case the element of a consideration is lacking, and the obligation of the debtor to pay the entire debt is not satisfied. Unfortunately, however, this rule is denied application to bills rendered for medical services, according to a decision of the Court of Appeals of New York, in Fuller v. Kemp. Here a physician made out a bill for $670 for medical services, in settlement of which a check for $400 was sent to him, and stated to be in full satisfaction. This was retained, credited on the account, and a bill for the balance rendered. The person charged thereupon again wrote the physician, calling his attention to the express condition upon which he had forwarded the check, and that it was sent as payment in full satisfaction of the latter's claim for professional services to date; that he did not recognize his right to retain the amount so offered, and repudiate the condition of the offer; and requested him either to keep the money upon the condition named, or return it to him by first mail. To this letter the physician made no reply, but kept the amount of the check, and after the expiration of nearly a year brought action for the recovery of $270, the balance of his account after applying the $400 received. Under such circumstances the court said that no further recovery could be had. The law favors the adjustment of such controversies without judicial intervention, and will not permit the creditor to accept and retain money which has been tendered by way of compromise, and then successfully litigate with his debtor for the recovery of a greater sum. But to constitute what is called an accord and satisfaction of unliquidated claims, it is necessary that the money should be offered in satisfaction of the claim, and the offer accompanied with such acts and declarations as amount to a condition that, if the money is accepted, it is accepted in satisfaction and such that the party to whom it is offered is bound to understand therefrom that, if he takes it, he takes it subject to such condition. When a tender or offer is thus made, the party to whom it is made has no alternative but to refuse it, or accept it upon such condition. If he takes it his claim is canceled, and no protest, declaration or denial of his, so long as the condition is insisted on, can vary the result. To make out the defense, the proof must be clear and unequivocal that the observance of the condition was insisted upon, and must not admit of the inference that the debtor intended that his creditor might keep the money tendered in case he did not assent to the condition upon which it was offered.

FAMILY EXEMPTION FROM CHOLERA SECURED BY SANITARY MEASURES.

The efficiency of a thorough hygiene of the domicile *versus* cholera is greater than many persons are willing to admit. A timely illustration of this important factor in the prevention of cholera coming from Asiatic Turkey, may be quoted from the *British Medical Journal*. A correspondent of that paper writes: "The infection is powerless among people who are careful to cook thoroughly all food and to boil all the drinking water. That the water is highly dangerous seems to be proved by a striking incident in a native family near us. In that household the sanitary rules were strictly observed, but one of the women, in bravado, drank three cups of unboiled water, saying to the others, 'Let us see what it will do.' She was taken ill and died in just twenty-four hours." And at the time the writer was last informed regarding the status of that family, that fatal case was the only one in that household. The boiling of the drinking water *plus* the keeping of it in vessels frequently cleansed with boiling water offers the best security that is at present available in the presence of an epidemic. Filtration has

been reported favorably from certain of the German cities, and is doubtless serviceable when the system is new and unimpaired; but it is less certainly under the command of a sanitarily regulated family than is the practice of boiling the drinking water. It is advisable to replenish the stock of boiled water every day, when cholera is present and near at hand in any given community.

NEW FORMS OF MEDICATION BY MEANS OF THYROID GLAND PREPARATIONS.

MESSRS. BURROUGHS, WELLCOME & Co. of London, have recently introduced a compressed pill containing pulverized sheep's thyroid gland for use in myxœdema and other allied diseases. A very low temperature is maintained during the process of drying and extractives are not used. Only fresh and healthy appearing glandular structure is employed; all cystically degenerated parts being carefully rejected. The tabloids are lightly compressed. Each of them is supposed to represent five grains of eligible and efficient gland tissue. As the particular element in the thyroid—that as a whole has been found to work so powerfully and promptly in myxœdema and sporadic cretinism, has not been isolated—the gland in its entirety, with or without its contained water, is for the present at least considered the proper therapeutic agent. The tabloids above referred to are claimed to contain all the active properties of the thyroid gland. It is claimed that they do not readily deteriorate. They are far more agreeable to the eye and palate than some of the forms that have been used, such as the minced raw or parboiled gland. Four tabloids thrice daily will represent about one-third part of an average sheep's thyroid, and may be considered a full dose. Young persons and those in advanced life, whose arteries are not intact from atheroma, should have a lower initial dosage. The thyroid of the bovine species as well as of the ovine —all of them formerly so much in disservice as to be a drug in the market—are now distinctly useful in medicine, and may be honored with a place in the drug market hereafter.

The firm above named, in a recent advertisement, refer to the bibliography of the subject, beginning with an article by DR. VESSALE, written early in 1891, and closing with a review of the subject by DR. WATSON WILLIAMS in the *Edinburgh Medical Journal* for May; eleven writings in all, and nearly all of them taking a favorable view of the prognosis of myxœdema and sporadic cretinism under the new treatment. It may be said in passing, that the attempts to apply this treatment to goitrous diseases have been disappointing in the hands of several independent clinicians.

Regarding the degree of success that has attended the treatment of myxœdema by the thyroid in its various modes of dosage, it may be roughly estimated that it has failed in 4 per cent. of the cases. Whether disastrous results have or have not followed the treatment in very feeble patients, is not yet positively demonstrated; but there is a certain amount of evidence going to show that cardiac depression may occur, and may even end fatally.

HAFFKINE'S EXPERIMENTS IN INDIA.

A report concerning the visit of M. HAFFKINE to Asia appears in the *Press and Circular*, May 24. Four hundred inoculations have been done by him at Agra with his protective virus of cholera, with no untoward manifestations. Permission has been granted enabling voluntary inoculations to be performed on the troops of the garrison; each inoculated soldier to have two days' light duty after the inoculations. M. HAFFKINE has been invited to visit the cholera localities in various parts of India, and he will probably be well received wherever he may go under the semi-official encouragement he has received. The medical officers of the Agra garrison have given him much assistance, otherwise he would have been greatly overworked or could have accomplished comparatively little.

DULCIN, A NEW SYNTHETIC SUGAR FOR DIABETICS.

The last number of *Notes on New Remedies* states that a new synthetic sugar, called "dulcin," or paraphenetol carbamide, is engaging the attention of DU BOIS-RAYMOND and other physiologists of Berlin. KOSSEL has been carrying on experiments on rabbits showing that the drug may be taken in doses of thirty grains daily without any disturbance of the general well-being. Dogs also have been fed with this substance for three weeks continuously, without any appreciable detriment to appetite or weight. The sweetening potency of this drug is as 200 to 1 of cane-sugar.

DR. EWALD has tried this substance clinically and upon persons in health. He reports that it is readily taken, the taste being acceptable to all. It proved to be especially suitable to diabetic persons, given to them in "the mannite combination, one to nine." Tablets containing two-fifths of a grain of dulcin—equivalent to eighty grains of lump sugar—and one or two of these can be used by patients as the sweetening agent for coffee and other beverages. EWALD regards dulcin as free from toxic property in the quantity that is liable to be taken.

THOSE who desire a bound volume of the proceedings of the Section on Obstetrics and Diseases of Women of the American Medical Association, whose sessions were recently held in Milwaukee, should send in their names and addresses to the office of THE JOURNAL at once. We have already received orders for forty-three copies, and must have at least 100 subscriptions. Price $1.00.

PHYSICIANS MAY TESTIFY AS TO MATTERS GAINED FROM THE STUDY OF BOOKS.—The testimony of physicians relating to what they have acquired from the study of standard medical works, rather than from experience in actual practice, is admissible in evidence, holds the Court of Civil Appeals of Texas in Fordyce v. Moore (22 S. W. Rep. 235), and is not to be rejected as testimony regarding the contents of medical books.

COMPETENCY AS EVIDENCE OF STATEMENTS MADE TO PHYSICIANS.—It is the rule of law, supported by the weight of authority, says the Supreme Court of Minnesota in Brusch v. St. Paul City Railway Co. (55 N. W. Rep. 57), that it is competent for physicians to give to the jury their opinions, based on a personal examination of the patient and on statements made by him at the time, touching his present bodily condition; and statements made to an attending physician by an injured party in respect to his injuries and pain suffered by him, are competent evidence in connection with the physician's examination and observation of the patient.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION (late the Association of Medical Superintendents of American Institutions for the Insane) held its regular annual meeting in this city on the 6th, 7th and 8th of the present month. The session was noteworthy in that it was the first one held after the reorganization effected last year. Under the former organization membership was dependent upon official position and any political appointee to the position of superintendent of an asylum or hospital for the insane could demand admission. At the meeting just held only one recent appointee in the asylums of this State was admitted to membership, Dr. Meyer, the pathologist at Kankakee, who was elected an associate member.

The meeting was a success, and the association will finish its half century of its existence next year with better prospects for the future than ever before.

PROFESSOR O. LIEBREICH ON MINERAL WATERS.—The following is an abstract of a paper on "Artificial and Natural Mineral Waters," read by Professor O. Liebreich at the Balneological Congress recently held in Berlin. He began by asking: Is Chemistry sufficiently advanced yet to produce artificial mineral water equal in all respects to the natural water? The answer can not be in the affirmative. Some substances, such as alizarine, indigo, urea, etc., can be produced synthetically, the artificial product being in every respect identical with the natural one. But in the case of mixtures such as mineral waters are, synthesis is a much more difficult matter. The analysis of each of the first-mentioned substances gives exactly 100 per cent., whilst in the case of artificial mineral waters the analyses—even of the most renowned analysts—fall short of 100 per cent., thus leaving a remainder the nature of which is absolutely unknown.

Many mineral waters on evaporation leave an organic residuum which goes by the name of glairine. It can not be affirmed with certainty that this residuum is therapeutically efficacious, but just as little can it be denied, and certainly the residuum is not contained in the analyses of the artificial mineral waters. Further, in mineral waters, carbonic acid gas occurs both free and in chemical combination. In 1882 it was discovered that carbonic acid gas forms a hydrate, that is to say, that there exist several kinds of carbonic acid gas. The presence of a carbonic acid gas hydrate had long been concluded from the existence of another combination that is a derivative of it, namely, carbonic acid ethyl, a carbonic acid hydrate, the two hydrogen atoms of which are replaced by two C_2H_5 groups, that is, carbonic acid ethyl ether. Carbonic acid ethyl is known for its agreeable taste. It is probably contained in champagne and in other alcoholic effervescent drinks. Ballo was the first to show the presence of carbonic acid hydrate experimentally. If a magnesium wire be introduced into carbonic acid gas, no reaction takes place. If a magnesium wire be introduced into water which has previously been saturated with carbonic acid gas, after some time gas is developed. This gas is not carbonic acid but pure hydrogen. We must conclude that in the water the carbonic acid gas has been transformed into carbonic acid hydrate, and this develops hydrogen, as every acid does when brought in contact with metal. It may be supposed that the action of anhydric carbonic acid gas is different from that of carbonic acid hydrate. The formation of hydrate takes place quickly in pure water, but very slowly in concentrated salt solutions.

Now there are substances which are difficult to demonstrate as such by analysis because they decompose very easily, so that only the products of their decomposition can be shown. Such a substance is carbon-oxide-sulphide (COS), which when alone shows neither the reactions of carbonic acid gas nor of sulphuretted hydrogen, but which, when for some time in contact with water, is decomposed into carbonic acid gas and sulphuretted hydrogen, according to the formula: $COS+H_2O=CO_2+H_2S$. In mineral waters at the springs carbon-oxide-sulphide occurs; the analysis shows it as carbonic acid gas and sulphuretted hydrogen.

There is a further reason for thinking that minimal quantities of substances in mineral waters may be of importance. The salt mixture forms a whole from which no part can be taken away without disturbing the equilibrium. This shows the fallacy of the old-fashioned notion that springs, the chief ingredients of which are the same, have the same therapeutic effect even though differing in some minor ingredients. There is no analysis so exact or sensitive as our senses—taste and smell. A perfume of musk in the air is perceived by the smell even though it can not be demonstrated by chemical analysis. Even the best manufactured artificial mineral waters differ from the natural ones in taste and value. This difference is not easy to explain. It is sometimes found, however, that the two mineral waters, otherwise identical, differ as regards electrical conductibility.

As to the so-called "indifferent" springs, it is a mistake to speak of them as of minor value. It must be remembered that they too contain mineral ingredients, if only in minimal quantities, which counteract the harmful properties of perfectly pure distilled water. Even hydropathy is a mineral water treatment, for if the water used were without traces of mineral substances it would be poisonous. This has been sufficiently proved elsewhere.—*Brit. Med. Jour.*

NECROLOGY.

Charles Pratt Strong, M.D.

The death of Dr. Charles Pratt Strong of Boston, in consequence of acute septicæmia following a laparotomy, is commented on by the *Medical and Surgical Journal*, of that city, both as a testimony to the devotion to duty of surgeons, and also as a warning to the latter that this devotion may be carried too far. Surgeons owe it to themselves and to the world that they bestow a greater degree of attention to the preservation of their own lives when brought into the presence of a possible surgical infection, than many of them are

in the habit of bestowing. It is no longer necessary to inculcate the septic dangers that attend the patient when under the knife; but it would not be amiss if our surgeons could agree upon a set of rules that must be observed by the operator for his own benefit. And this is proper and expedient, not solely for the reason that it may mean the saving of a preeminently valuable life, but because there are considerations affecting the welfare of the patient that make it desirable that the surgeon's knowledge shall be available in the after-conduct of the case. So that, whichever way the question may be viewed, there seems to be a greater call than has hitherto been urged, that the surgeon shall aim to close the avenues of sepsis that lead towards himself; being of course none the less watchful for his patient all the while. The fact that the terminology of the profession has not recognized the existence of an infective surgical auto-trauma may induce some one of our lexicographers to propose a descriptive phrase, not too much involved, analogous to the term applied to that kindred but better known form of traumatism, namely "the dissection-wound." The expediency of such an added word or phrase is made manifest by the fatal accident of Dr. Strong. Accidents of this character will, we believe, receive better attention if they shall be differentiated into a class by themselves and receive a name.

Of Dr. Strong's merits as a physician and surgeon the *Boston Journal* writes most sympathetically. From every point of view the writer assumes, the early demise of Dr. Strong appears a sad and memorable professional event. He had risen to the front rank of his profession after about ten years of practice in the exacting city of Boston, having gone there without influential friends or extraneous helps of any kind. He had in that short time advanced steadily to a position where he was in demand as a consultant, especially in cases of abdominal surgery, besides having built up a most desirable family practice of his own. His native endowment was good, above the average, and he possessed a winning address. The confidence of the patient was generally freely and quickly yielded, and he was untiring in his efforts to prove that the trust reposed in him was rightly placed. As a surgeon he was bold yet cautious, seeking always the least hazardous route to results; he was skillful yet gentle, seldom hesitant and fully in command of his resources and skilled knowledge. He was a clear and forcible writer, and he has left behind him a long list of communications on gynecological and surgical subjects. The date of Dr. Strong's decease was March 14, at the early age of fifty-five years, after an illness of five days' duration. As stated above, this illness followed his performance of a laparotomy, showing itself as acute septic infection with an extensive phlegmonous inflammation of the thigh, and kidney disease. It will be a long day before this mournful exitus will be forgotten by his colleagues of the city of Boston. We think there is a lesson in it for the entire fellowcraft of surgeons.

MISCELLANY.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The nineteenth annual meeting of the Mississippi Valley Medical Association will occur in Indianapolis, Wednesday, Thursday and Friday, October 4, 5 and 6, 1893.

A general session will be held each morning and the afternoons will be devoted to section work. There will be three sections at this meeting, viz: One on general medicine, one on general surgery and one on obstetrics and gynecology; the last mentioned having been added since the last meeting.

The indications at present are, that for genuine scientific work, this will be one of the best meetings in the history of the association. The attendance will probably be unusually large, as many physicians expect to make their visit to the World's Fair at this time. Chicago is but a few hours' ride from Indianapolis, and there is no more delightful time of the year in which to visit the World's Fair than this. Holders of tickets to Chicago on any line passing through Indianapolis will be entitled to stop-over privileges at the latter point. Cheap rates will also prevail between these two cities.

The profession of Indianapolis is united in extending a cordial invitation to physicians and their families to attend the meeting.

Reduced railroad rates will be provided, further notice of which will be given.

The secretary will be glad to receive titles from those physicians desiring to favor the Association with papers. It is especially requested that these titles be sent as early as possible, in order to give ample opportunity for the appointment of leaders in discussion.

The secretary will take pleasure in giving any information in connection with the meeting.

FREDERICK C. WOODBURN, *Secretary.*
No. 399 College Avenue.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers serving in the Medical Department, U. S. Army, from June 4, 1893, to June 9, 1893.

Major John Brooke, Surgeon, order relieving from duty at Ft. Leavenworth, Kan., and assigning him to temporary duty as attending surgeon and examiner of recruits at Philadelphia, Pa., is revoked. By direction of the Secretary of War.

Capt. Louis S. Tesson, Asst. Surgeon, is granted leave of absence for twenty-one days, to take effect on or about June 15, 1893.

Major James P. Kimball, Surgeon U. S. A., leave of absence granted on surgeon's certificate of disability, is extended two months on surgeon's certificate of disability.

Capt. Jefferson D. Poindexter, Asst. Surgeon, is relieved from duty at Ft. Nebraska, and will report in person to the commanding officer, Ft. Bowie, Ariz., for duty at that post.

APPOINTMENT.

Lieut.-Col. George M. Sternberg, Deputy Surgeon General, to be Surgeon General with the rank of Brigadier General, May 30, 1893.

PROMOTION.

Major John H. Janeway, Surgeon, to be Deputy Surgeon General with the rank of Lieutenant Colonel, May 31, 1893.

RETIREMENT.

Brigadier General Charles Sutherland, Surgeon General, May 29, 1893.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week ending June 10, 1893.

P. A. Surgeon S. S. White, ordered to the U. S. S. "Constellation."

Asst. Surgeon Henry La Motte, from the U. S. S. "Constellation," and to the U. S. S. "Newark."

Surgeon A. M. Moore, from Navy Yard, Mare Island, and placed on waiting orders.

Surgeon D. O. Lewis, from the Naval Hospital, and to the Navy Yard, Mare Island, Cal.

Asst. Surgeon J. E. Riggs, ordered to the Naval Hospital, Mare Island, Cal.

Medical Director A. L. Gihon, from special duty, New York, and to Washington Hospital.

Medical Director H. M. Wells, from Naval Hospital, Washington, and wait orders.

Surgeon W. A. McClurg, from Bureau Medicine and Surgery, and to the U. S. S. "Concord."

Surgeon L. G. Henneberger, ordered to special duty attending officers and their families in New York.

Surgeon R. C. Persons, from U. S. S. "Concord," and granted two months' leave.

Asst. Surgeon J. S. Hope, from the U. S. S. "Fern," and to the U. S. S. "Charleston."